

# COAL AGE

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## The Committee on Coal Production

I do not believe it is necessary to apologize for using this page so often recently in a personal way, to bring home to coal men the seriousness of steps now being taken to regulate the production, transportation and consumption of coal during the war. The matter is vital.

A "fuel board" has been appointed, and it is an admirable one. It is a committee of practical men, not one of whom sought the job. Not a single member of this committee even knew he was being considered until he was notified of his selection by the Council of National Defense.

*Francis S. Peabody*, chairman of the committee, has turned over to others the direction of his large interests in Chicago and elsewhere, and with his family has taken up residence in Washington, where he will remain until his services are no longer needed. He has brought his own secretary from Chicago, and is entering into this huge work with the same thoroughness and enthusiasm that have made him so successful in the conduct of his private affairs. We wrote at length about Mr. Peabody last week.

*E. J. Berwind*, the second member of the committee, is known throughout the length and breadth of America's coal fields. He mines, sells and exports. His principal operations are in Pennsylvania and West Virginia. He is able to give all his time to this work and brings to the committee influence, prestige and authority that could hardly be secured in any other way. As president of the Berwind-White Coal Mining Co. he has secured a ripe experience, especially in the production of smokeless coal adaptable for naval and steam purposes. It is probable that Mr. Berwind has more important foreign connections than any other American coal operator.

*W. W. Keefer*, president of the Pittsburgh Terminal Railroad and Coal Co., is one of the live wires in western Pennsylvania. He has had long practical experience in mining and is regarded as one of the best judges of coal properties in the Pittsburgh district. He is also familiar with conditions in the Middle West coal fields and is an expert on transportation features connected with the shipping of coal. The vast bituminous coal interests of Pennsylvania could not have a better man on this committee to represent them.

*S. D. Warriner*, president of the Lehigh Coal and Navigation Co., is without doubt the most aggressive of all the anthracite leaders. He has come up from the engineering ranks, being a graduate of the mining department of Lehigh University. Early in life he was mechanical engineer for the Lehigh Valley Coal Co.; later he was in charge of development work at the Calumet & Hecla mines in Michigan, where he won recognition as a clever engineer. The Pennsylvania people, however, did not permit the West to claim Mr. Warriner permanently, for

he was called back to become general manager of all the mines of the Lehigh Valley Coal Co. A few years later Mr. Warriner was selected to fill the presidency of the Lehigh Coal and Navigation Co., succeeding the late W. A. Lathrop. It is doubtful if any other man knows as much about all the ramifications of anthracite mining as does S. D. Warriner. He has the confidence and respect of every man in the field and for years has been chairman of the Anthracite Conciliation Board, the highest and most important tribunal dealing with anthracite mining. The hard-coal people will have no cause to regret the appointment of Mr. Warriner to the "fuel board."

*C. M. Moderwell*, president of the United Coal Mining Co., is a native son of Illinois and a graduate of the University of Worcester in Ohio. In 1892 Mr. Moderwell first became connected with the coal business, serving as a clerk in the office of the Montana Coal and Coke Co., a West Virginia concern controlled by the Watsons. A little later he became western sales agent for the West Virginia people, and served in that capacity for a number of years. About 15 years ago Mr. Moderwell formed the National Coal and Coke Co. Three years later he secured control of a large coal acreage in Franklin County, Illinois, and here started the first operations of the United Coal Mining Co. His business and his influence in Middle West coal circles have grown by leaps and bounds, until today Mr. Moderwell is acknowledged one of the leaders in his particular field.

*Erschine Ramsay*, vice president of the Pratt Consolidated Coal Co., Birmingham, Ala., is an engineer of long experience and an inventor of note. He is one of the principal owners of the Pratt company, which is perhaps the largest independent coal operation in the South. Mr. Ramsay and Mr. Warriner would be the real technical coal engineers of the board. Erschine Ramsay was a member of the engineering commission sent by the Bureau of Mines in 1911 to study the coal mines of Europe. His early experience was in Pennsylvania, where at the age of 19 he succeeded his father as superintendent of the Frick company's Monastery mine and coke works, the elder Ramsay having been made superintendent of mines of all the Frick company's operations.

Step by step Mr. Ramsay advanced until he was assistant engineer for the H. C. Frick Coke Co., then superintendent and engineer of the Pratt Mines Division of the Tennessee Coal, Iron and Railroad Co. His next position was that of chief engineer for the T. C. I. & R. R. Co., which post he held until his appointment as chief engineer and vice president of the Pratt Consolidated Coal Co. in 1901. The Pratt mines produce about 3,000,000 tons annually.

*N. H. Taylor*, vice president of the Central Coal and Coke Co., Kansas City, Mo., is one of the most experi-

enced and widely known coal men in the Middle West. His company has three mines in Missouri, three in Wyoming, two in Oklahoma, seven in Arkansas and nine in Kansas. Mr. Taylor started in the selling end of the coal business, commencing as Chicago manager of sales for the Sunday Creek Coal Co. in 1885. In 1891 he became interested in the Wilmington coal field in Illinois. For years he was a member of the board of the Illinois Coal Operators Association, and has acted as spokesman for the Illinois coal owners in many of the wage conferences with the miners. In 1910 Mr. Taylor was elected president of the Illinois Coal Operators Association, and in 1912 became president of the American Federation of Coal Operators. Before going with the Central Coal and Coke Co., three or four years ago, Mr. Taylor was general manager of the Northern Central Coal Co., president of the Monad Coal Co. and president of Big Jo Block Coal Co. in Iowa. In addition he was general manager of the Big Four Wilmington Coal Co. in Illinois. Through the management of mines in so many fields he has acquired a broad experience, which fits him perfectly to serve on this important committee.

*J. F. Welborn*, president of the Colorado Fuel and Iron Co., is the chief executive of the largest coal corporation in the Rocky Mountain field. This company operates 27 mines and eight coke-oven plants. Mr. Welborn has earned for himself an enviable reputation among coal men in the far West. Under his administration the Colorado Fuel and Iron Co. has become the greatest industrial factor in the states where its activities are located. Mr. Welborn has encouraged measures tending to better working and living conditions and increased safety, until today the C. F. & I. Co. is recognized as a leader in such welfare plans.

*Daniel B. Wentz*, president of the Stonega Coal and Coke Co., is located in Philadelphia, but is head of a company operating mines at Stonega, Osaka, Roda, Arno, Imboden and Keokee, Virginia. His concern also has 1756 ovens. The Stonega company is one of the most up-to-date concerns in the country and employs 4000 men at its mines. The coal produced by Mr. Wentz's company is a high-grade fuel suitable for many Government purposes. With Mr. Wentz on this committee representation is assured for the smokeless fields of Virginia and West Virginia.

*E. L. Pierce*, vice president of the Semet-Solvay Co., Syracuse, N. Y., will give the committee the benefit of his experience in the byproduct coke business. This is one branch of the fuel industry of the country concerning which there is a dearth of information outside the operating officials of the byproduct companies. It is well that the Government will thus have a call on the knowledge possessed by Mr. Pierce of byproduct coke manufacture.

*John Mitchell*, chairman of the New York State Industrial Commission, and former president of the United Mine Workers of America, is so well known to the coal-mining fraternity of America that no comment is necessary. It would have been impossible to select a man of higher qualifications or one who could have brought to this committee a more unified support from the mine workers themselves. We anticipate that Mr. Mitchell will be one of the star members of this board, and we are sure that in view of the vital necessity of the miners working continuously during the period of the war the Council

of National Defense could not have made a more opportune selection.

*Van H. Manning*, Director of the U. S. Bureau of Mines, is proving himself to be a worthy successor to the great man he succeeded and whose memory is revered by the coal industry at large. Mr. Manning is ex-officio member of a large number of committees that have been appointed to handle important problems in connection with the present war. His association with the committee, therefore, links this commission up with a number of other Federal committees and departments; in other words, Mr. Manning is really the connection between the fuel board and the government. The experts under him will give the committee the full benefit of all the investigations that have been conducted by the Bureau of Mines. It is from this source that Mr. Peabody and his associates will get information of value concerning the possibilities of great savings in the mining and combustion of coal.

*George Otis Smith*, director of the U. S. Geological Survey, will fill an important place on the fuel board. Mr. Smith will furnish the committee with all the valuable statistics concerning the various coal fields of the country. It is to him that the fuel board must look for data and information dealing generally with plans for redistricting the entire United States. The output and character of the product of each mine will be made available by his department.

*James J. Storrow*, of Lee Higginson & Co., bankers, will represent the large consuming interests of New England. Mr. Storrow is chairman of the Massachusetts Committee on Public Safety, Boston, and is exceedingly well informed with reference to the dire straits of New England's consuming public in recent months. The problems of the consumer will not be overlooked, and Mr. Storrow will speak for all the large interests of the country to whom a prompt and proper supply of fuel is a vital necessity.

*George W. Reed*, of Chicago, will be secretary of the committee. Mr. Reed's long connection with Mr. Peabody has given him an intimate acquaintance with the coal-mining business, and if Mr. Peabody is to be quoted, the committee will have an efficient and faithful secretary in Mr. Reed.

The above mentioned individuals constitute the personnel of the fuel board. It is doubtful if a more competent or a more unselfish collection of men could have been brought together for the purpose in hand. The next question is just how far this committee will be given plenary powers. It is likely that the patriotism of the coal-mining industry will make it unnecessary for Congress to pass any radical legislation to secure the necessary results. The attitude of the Washington authorities and the Council of National Defense is one of hope that the country's coal supply and coal prices will quickly regulate themselves under the advisory guidance of this new fuel committee.

The first meeting of the fuel board was held in Washington on Wednesday. Before many days it is likely that the coal industry will be informed of the exact purpose and plans of the committee. Subcommittees will be announced for various fields. A more general organization of a semi-military nature will probably be effected as soon as it is known what attitude the government proposes to take toward the enlistment of miners for army service.



If miners are exempted, it is likely that they will be asked to enlist in an industrial way and do their bit in the mines instead of at the front.

If the committee is not given full plenary powers, such as are proposed for the food board, then results will have to be obtained through wide publicity and the public will have to be instructed as to what constitute fair prices for coal in all zones. Any effort of the fuel board will be ineffective unless the closest kind of coöperation on the part of the country's transportation lines is obtained. Efficiency in the production of coal will do no good if cars are not available for bringing the coal to market.

It is to be expected that the fuel committee will make important announcements with reference to the liquor question, the tendency of miners to so often change employment and the frequency of petty strikes. It is also

likely that there will be a carefully planned campaign for the purpose of increasing mechanical efficiency and a separate campaign designed to save on consumption; that is, reduce waste in burning coal.

After transportation problems in America have been solved, it would not be amiss for the fuel board to investigate the possibilities of the export trade. With a Federal law that has absolutely ruined ocean transportation of coal to New England and a freight rate of \$75 to ports on the other side of the Atlantic, there is undoubtedly room for some important research.

The coal industry will not be found lacking in its degree of patriotism and the government may rest assured that the "fuel board" is of such personnel that it will have the respect and coöperation of the entire mining fraternity.

FLOYD W. PARSONS.

## Ideas and Suggestions

### Another Indicator for Tables

By A. C. CALLEN\*

The indicator for traverse tables described by T. Edwin Smith in *Coal Age*, page 382, is an excellent device to use with the traverse tables shown in the illustration accompanying his article. These tables give the latitudes and departures in adjacent columns for distances from 1 to 50 ft. on one page and from 51 to 100 ft. on the next, for bearings varying by quarter degrees. In other words, they are tables such as would be used in computing the results of a compass survey.

When a transit is used the angles are read to minutes and a set of traverse tables such as Gurden's is necessary for accurate computation. These tables give the values of the latitudes and departures for any course from 1 to 100 ft. and for bearings varying by minutes. The arrangement of these tables is different from those illustrated in Mr. Smith's article. The left-hand side of a single page gives the latitudes and the right-hand side the departures for distances from 1 to 100 ft., 10 min. of angle being given on each page. The values of the latitudes and departures are given to four places of decimals, and as to repeat the whole number in each column would increase the size of the tables unduly, it is given in only two columns, the one to the left of the center for latitudes and the one to the right of the center for departures.

It is evident that to secure the latitude, after the proper page has been selected, it is necessary to perform three operations, and then three more for the departure. These operations are as follows: Follow across the table horizontally from the proper distance, as found in the distance column at the extreme right and left of each page, to the center to get the whole number for the latitude; then go to the top of the page and select the column for the proper minute; follow this down to the proper distance line and get the decimal part of the latitude. Repeat for the departure.

By the use of the device to be described, these figures can be secured in less than half the time it would take if done in the manner just described. Secure a piece of transparent celluloid about 8 in. long and 1 in. or more in width. (A piece of an old celluloid triangle will do admirably if it is sufficiently transparent.) Two notches about  $\frac{1}{8}$  in. deep and the width of a single

# TRAVERSE TABLES

10°	1'	2'	3'	4'	5'	6'	7'	8'	9'	10'	11'	50°	1'	2'	3'	4'	5'	6'	7'	8'	9'	10'	11'	1°	1'	2'	3'	4'	5'	6'	7'	8'	9'	10'	11'	12'			
Center												Right													Left														
1.626	1.627	1.628	1.629	1.630	1.631	1.632	1.633	1.634	1.635	1.636	1.637	1.638	1.639	1.640	1.641	1.642	1.643	1.644	1.645	1.646	1.647	1.648	1.649	1.650	1.651	1.652	1.653	1.654	1.655	1.656	1.657	1.658	1.659	1.660	1.661	1.662	1.663	1.664	1.665
1.666	1.667	1.668	1.669	1.670	1.671	1.672	1.673	1.674	1.675	1.676	1.677	1.678	1.679	1.680	1.681	1.682	1.683	1.684	1.685	1.686	1.687	1.688	1.689	1.690	1.691	1.692	1.693	1.694	1.695	1.696	1.697	1.698	1.699	1.700	1.701	1.702	1.703	1.704	1.705
1.706	1.707	1.708	1.709	1.710	1.711	1.712	1.713	1.714	1.715	1.716	1.717	1.718	1.719	1.720	1.721	1.722	1.723	1.724	1.725	1.726	1.727	1.728	1.729	1.730	1.731	1.732	1.733	1.734	1.735	1.736	1.737	1.738	1.739	1.740	1.741	1.742	1.743	1.744	1.745
1.746	1.747	1.748	1.749	1.750	1.751	1.752	1.753	1.754	1.755	1.756	1.757	1.758	1.759	1.760	1.761	1.762	1.763	1.764	1.765	1.766	1.767	1.768	1.769	1.770	1.771	1.772	1.773	1.774	1.775	1.776	1.777	1.778	1.779	1.780	1.781	1.782	1.783	1.784	1.785
1.786	1.787	1.788	1.789	1.790	1.791	1.792	1.793	1.794	1.795	1.796	1.797	1.798	1.799	1.800	1.801	1.802	1.803	1.804	1.805	1.806	1.807	1.808	1.809	1.810	1.811	1.812	1.813	1.814	1.815	1.816	1.817	1.818	1.819	1.820	1.821	1.822	1.823	1.824	1.825
1.826	1.827	1.828	1.829	1.830	1.831	1.832	1.833	1.834	1.835	1.836	1.837	1.838	1.839	1.840	1.841	1.842	1.843	1.844	1.845	1.846	1.847	1.848	1.849	1.850	1.851	1.852	1.853	1.854	1.855	1.856	1.857	1.858	1.859	1.860	1.861	1.862	1.863	1.864	1.865
1.866	1.867	1.868	1.869	1.870	1.871	1.872	1.873	1.874	1.875	1.876	1.877	1.878	1.879	1.880	1.881	1.882	1.883	1.884	1.885	1.886	1.887	1.888	1.889	1.890	1.891	1.892	1.893	1.894	1.895	1.896	1.897	1.898	1.899	1.900	1.901	1.902	1.903	1.904	1.905
1.906	1.907	1.908	1.909	1.910	1.911	1.912	1.913	1.914	1.915	1.916	1.917	1.918	1.919	1.920	1.921	1.922	1.923	1.924	1.925	1.926	1.927	1.928	1.929	1.930	1.931	1.932	1.933	1.934	1.935	1.936	1.937	1.938	1.939	1.940	1.941	1.942	1.943	1.944	1.945
1.946	1.947	1.948	1.949	1.950	1.951	1.952	1.953	1.954	1.955	1.956	1.957	1.958	1.959	1.960	1.961	1.962	1.963	1.964	1.965	1.966	1.967	1.968	1.969	1.970	1.971	1.972	1.973	1.974	1.975	1.976	1.977	1.978	1.979	1.980	1.981	1.982	1.983	1.984	1.985
1.986	1.987	1.988	1.989	1.990	1.991	1.992	1.993	1.994	1.995	1.996	1.997	1.998	1.999	2.000	2.001	2.002	2.003	2.004	2.005	2.006	2.007	2.008	2.009	2.010	2.011	2.012	2.013	2.014	2.015	2.016	2.017	2.018	2.019	2.020	2.021	2.022	2.023	2.024	2.025
2.026	2.027	2.028	2.029	2.030	2.031	2.032	2.033	2.034	2.035	2.036	2.037	2.038	2.039	2.040	2.041	2.042	2.043	2.044	2.045	2.046	2.047	2.048	2.049	2.050	2.051	2.052	2.053	2.054	2.055	2.056	2.057	2.058	2.059	2.060	2.061	2.062	2.063	2.064	2.065
2.066	2.067	2.068	2.069	2.070	2.071	2.072	2.073	2.074	2.075	2.076	2.077	2.078	2.079	2.080	2.081	2.082	2.083	2.084	2.085	2.086	2.087	2.088	2.089	2.090	2.091	2.092	2.093	2.094	2.095	2.096	2.097	2.098	2.099	2.100	2.101	2.102	2.103	2.104	2.105
2.106	2.107	2.108	2.109	2.110	2.111	2.112	2.113	2.114	2.115	2.116	2.117	2.118	2.119	2.120	2.121	2.122	2.123	2.124	2.125	2.126	2.127	2.128	2.129	2.130	2.131	2.132	2.133	2.134	2.135	2.136	2.137	2.138	2.139	2.140	2.141	2.142	2.143	2.144	2.145
2.146	2.147	2.148	2.149	2.150	2.151	2.152	2.153	2.154	2.155	2.156	2.157	2.158	2.159	2.160	2.161	2.162	2.163	2.164	2.165	2.166	2.167	2.168	2.169	2.170	2.171	2.172	2.173	2.174	2.175	2.176	2.177	2.178	2.179	2.180	2.181	2.182	2.183	2.184	2.185
2.186	2.187	2.188	2.189	2.190	2.191	2.192	2.193	2.194	2.195	2.196	2.197	2.198	2.199	2.200	2.201	2.202	2.203	2.204	2.205	2.206	2.207	2.208	2.209	2.210	2.211	2.212	2.213	2.214	2.215	2.216	2.217	2.218	2.219	2.220	2.221	2.222	2.223	2.224	2.225
2.226	2.227	2.228	2.229	2.230	2.231	2.232	2.233	2.234	2.235	2.236	2.237	2.238	2.239	2.240	2.241	2.242	2.243	2.244	2.245	2.246	2.247	2.248	2.249	2.250	2.251	2.252	2.253	2.254	2.255	2.256	2.257	2.258	2.259	2.260	2.261	2.262	2.263	2.264	2.265
2.266	2.267	2.268	2.269	2.270	2.271	2.272	2.273	2.274	2.275	2.276	2.277	2.278	2.279	2.280	2.281	2.282	2.283	2.284	2.285	2.286	2.287	2.288	2.289	2.290	2.291	2.292	2.293	2.294	2.295	2.296	2.297	2.298	2.299	2.300	2.301	2.302	2.303	2.304	2.305
2.306	2.307	2.308	2.309	2.310	2.311	2.312	2.313	2.314	2.315	2.316	2.317	2.318	2.319	2.320	2.321	2.322	2.323	2.324	2.325	2.326	2.327	2.328	2.329	2.330	2.331	2.332	2.333	2.334	2.335	2.336	2.337	2.338	2.339	2.340	2.341	2.342	2.343	2.344	2.345
2.346	2.347	2.348	2.349	2.350	2.351	2.352	2.353	2.354	2.355	2.356	2.357	2.358	2.359	2.360	2.361	2.362	2.363	2.364	2.365	2.366	2.367	2.368	2.369	2.370	2.371	2.372	2.373	2.374	2.375	2.376	2.377	2.378	2.379	2.380	2.381	2.382	2.383	2.384	2.385
2.386	2.387	2.388	2.389	2.390	2.391	2.392	2.393	2.394	2.395	2.396	2.397	2.398	2.399	2.400	2.401	2.402	2.403	2.404	2.405	2.406	2.407	2.408	2.409	2.410	2.411	2.412	2.413	2.414	2.415	2.416	2.417	2.418	2.419	2.420	2.421	2.422	2.423	2.424	2.425
2.426	2.427	2.428	2.429	2.430	2.431	2.432	2.433	2.434	2.435	2.436	2.437	2.438	2.439	2.440	2.441	2.442	2.443	2.444	2.445	2.446	2.447	2.448	2.449	2.450	2.451	2.452	2.453	2.454	2.455	2.456	2.457	2.458	2.459	2.460	2.461	2.462	2.463	2.464	2.465
2.466	2.467	2.468	2.469	2.470	2.471	2.472	2.473	2.474	2.475	2.476	2.477	2.478	2.479	2.480	2.481	2.482	2.483	2.484	2.485	2.486	2.487	2.488	2.489	2.490	2.491	2.492	2.493	2.494	2.495	2.496	2.497	2.498	2.499	2.500	2.501	2.502	2.503	2.504	2.505
2.506	2.507	2.508	2.509	2.510	2.511	2.512	2.513	2.514	2.515	2.516	2.517	2.518	2.519	2.520	2.521	2.522	2.523	2.524	2.525	2.526	2.527	2.528	2.529	2.530	2.531	2.532	2.533	2.534	2.535	2.536	2.537	2.538	2.539	2.540	2.541	2.542	2.543	2.544	2.545
2.546	2.547	2.548	2.549	2.550	2.551	2.552	2.553	2.554	2.555	2.556	2.557	2.558	2.559	2.560	2.561	2.562	2.563	2.564	2.565	2.566	2.567	2.568	2.569	2.570	2.571	2.572	2.573	2.574	2.575	2.576	2.577	2.578	2.579	2.580	2.581	2.582	2.583	2.584	2.585
2.586	2.587	2.588	2.589	2.590	2.591	2.592	2.593	2.594	2.595	2.596	2.597	2.598	2.599	2.600	2.601	2.602	2.603	2.604	2.605	2.606	2.607	2.608	2.609	2.610	2.611	2.612	2.613	2.614	2.615	2.616	2.617	2.618	2.619	2.620	2.621	2.622	2.623	2.624	2.625
2.626	2.627	2.628	2.629	2.630	2.631	2.632	2.633	2.634	2.635	2.636	2.637	2.638	2.639	2.640	2.641	2.642	2.643	2.644	2.645	2.646	2.647	2.648	2.649	2.650	2.651	2.652	2.653	2.654	2.655	2.656	2.657	2.658	2.659	2.660	2.661	2.662	2.663	2.664	2.665
2.666	2.667	2.668	2.669	2.670	2.671	2.672	2.673	2.674	2.675	2.676	2.677	2.678	2.679	2.680	2.681	2.682	2.683	2.684	2.685	2.686	2.687	2.688	2.689	2.690	2.691	2.692	2.693	2.694	2.695	2.696	2.697	2.698	2.699	2.700	2.701	2.702	2.703	2.704	2.705
2.706	2.707	2.708	2.709	2.710	2.711	2.712	2.713	2.714	2.715	2.716	2.717	2.718	2.719	2.720	2.721	2.722	2.723	2.724	2.725	2.726	2.727	2.728	2.729	2.730	2.731	2.732	2.733	2.734	2.735	2.736	2.737	2.738	2.739	2.740	2.741	2.742	2.743	2.744	

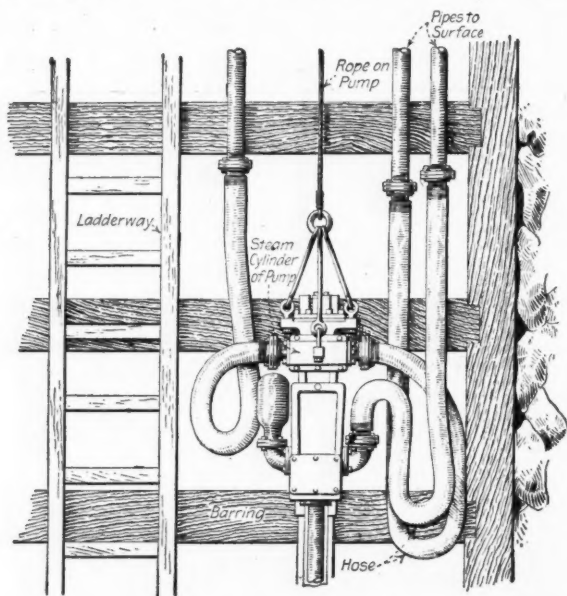
In case celluloid is not at hand a straight-edge made of cardboard or a thin piece of wood and having the space where the notches would come if celluloid were used blacked in with ink instead of being cut out, will give excellent service. In fact some engineers may prefer this style, inasmuch as all the figures are in plain sight and do not have to be viewed through the celluloid.

It should be noted that Gurden's traverse tables are headed "cosine" and "sine" instead of "latitude" and "departure." Inasmuch as the length of the course times the cosine of the bearing is always equal to the latitude, and the length times the sine of the bearing is always equal to the departure, it is evident that the word latitude can be substituted for the word cosine, and departure for sine, in every table heading. If this simple rule is remembered, no confusion can result.

### Hose Connections on Sinking Pumps

The flexibility attained through using hose connections in handling sinking pumps in shaft work may not be an original idea, but it certainly deserves to be more widely known and applied, says J. F. K. Brown in *Engineering and Mining Journal*.

As the sinking of a shaft proceeds and the depth increases, the sinking pump has to be frequently lowered. Usually this is done by fitting in short lengths of pipe, until a sufficient distance for a full pipe length has been sunk. This may be a comparatively simple matter where there is little water in the shaft and there is consequently



ARRANGEMENT OF FLEXIBLE HOSE CONNECTIONS FOR SINKING PUMPS

plenty of time in which to make the change. Remember, however, that a shaft pump must have attached to it two and sometimes three pipes (depending on whether the power is steam or air)—the intake steam, the exhaust steam and the water discharge. These pipes extend to the surface, and in a long distance it is a hard task to juggle the pump up and down so that they may be changed and brought into position to be properly connected to the pump. Three full lengths have to be changed at one time, since the alternative of working with a number of short lengths of varying measurement implies too much "dodging" for position. It is nearly

impossible to get three pipe lengths projecting down a shaft to remain in the same straight line, so that they can be readily attached to the pump. Nearly always the pump piece, probably a short nipple, and the pipe to which it is to be attached meet at an angle sufficiently large to make the threading of the one piece to the other a matter of great difficulty. This is greater in inclined shafts, where the pipes lie along one wall and where a projecting piece of timber may throw them out of line. In large sinking operations these difficulties are provided against, but in small prospecting work there is much thoughtless procedure. In cases where there is excessive water and the pump is working to its utmost capacity, the time spent doing this pipe changing is often so great that no progress can be made. During the time of change the water has risen so rapidly that the pump should have been left where it was before the proposed change was made.

To overcome a series of difficulties of this character in one particular instance, the scheme was tried of inserting in the pipe line, between the bottom lengths of pipe and the pump, a pipe length of hose. Twenty-two feet of steam hose for the steam pipe, the same for the exhaust pipe, and also for the discharge pipe, were cut and fitted with a short nipple connection and a union. The connections between the hose, pump and pipe were made by means of unions, one at each end of each hose. As there was pressure on steam- and water-discharge connections, care had to be taken to have them fitted extra tight, since a sudden blowoff of steam or a burst of water through a broken connection is an unnecessary evil. The kinking of the hose had to be watched, and when the pump was close to the pipe ends, the coils of hose were looped by leather holders and marlin tying strings to nails driven in the timbers so placed that the hose would be clear of the working space in the shaft.

The advantages gained by this scheme were flexibility of the pumping arrangements and speed in changing pipe connections. The disadvantages of any twists in the pipe from the surface to the pump were readily obviated by the use of the hose; the pump could be lowered 20 ft. at a time without changing the pipes and could be kept working if required during the lowering process. This prevented the loss of time during which the men working in the shaft bottom were driven out by water and the time while that water was being pumped out. The hose and the unions facilitated the changing of the pipes to a great extent. The three pipes to be changed were lowered by rope to the pump and hung in position along the side of the shaft, while the pump remained where it was without any change. The pumpman took his position with his pipe wrenches, at the top connection of the hose and pipe, where he broke the unions of all three connections in turn. His assistant stood on the pump below. The bottom end of each pipe to be changed into the new position, lying ready at the pumpman's hand, had on it the upper half of a fresh union, and to this the pumpman lightly attached the hose. The pump and hose were then lowered to the second man, who detached the hose for the time being while the man above connected his pipe to the line, and the man on the pump tightened up his union between hose and pump and the connection was ready for operation. A similar procedure took place with the remaining two connections. This meant only a short time lost at the change and reduced the danger of a lost pump.



# Mining Methods in Great Britain\*

**SYNOPSIS**—A review of the coal fields of Great Britain with special reference to their methods of mining and their difficulties in operation. Bare wires are forbidden, so electric locomotives are not used. The disk and post puncher machines are the types of undercutters most generally used. The pressure of air used at the face for air-driven machines is about 40 lb. Output per day of all mining machines in South Wales averaged about 22 tons in 1914.

Most British workings are operated by longwall, that system being well nigh as general as is the room-and-pillar system in the United States. In districts where the seams underlie villages or cities the bord-and-pillar system is used, but as a rule the nature of the roofs, the thickness of the seams and the labor conditions in Great Britain favor longwall mining.

In some districts a 3-ft. seam is considered somewhat unusual, as many of the thicker seams have been worked out. Throughout the country, and especially in Scotland, 22- and 24-in. seams are quite largely worked. In Yorkshire, Lancashire and Staffordshire there is much high coal, the seams running 5 and 6 ft. thick.

The main- and tail-rope haulage system is adopted widely, but the endless-rope method is also in extensive use. Apparently no air or storage-battery locomotives are being operated. Under the Mines Act, the use of bare trolley wires is prohibited in all mines, whether fiery or not, so no locomotives of the type that is most common in America are employed.

Considerably more than half the British mines are fiery pits and employ safety lamps. Electricity is utilized in many gassy mines, but its use underground is hedged about with many strict rules which make it an expensive form of power. All cables, switches and electrical equipment have to be thoroughly and conscientiously protected, insulated and tested at frequent intervals.

It is considered possible in some quarters that the use of electricity at the coal face may be prohibited entirely within a measurable period of time. At most new installations 500-volt 50-cycle alternating current is adopted as the standard, but there is in this matter a great variety of practice. Only one or two collieries employ voltages as low as 220. Many plants are using current at 500 volts and 40 cycles. The direct-current installations almost all use 500-volt current.

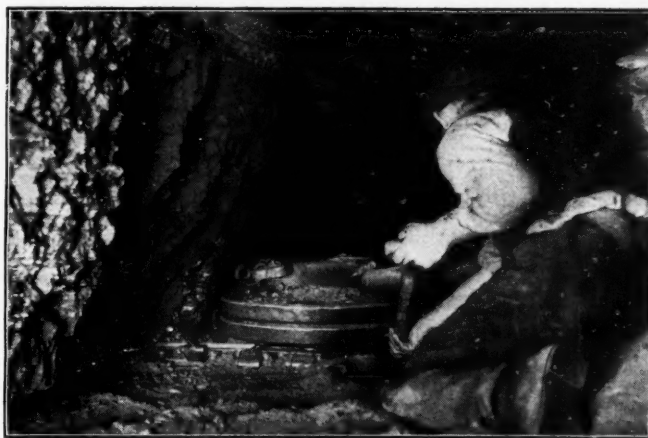
The air pressures employed at the face average about 40 lb. Many believe higher pressures are inadvisable on account of the greater loss by leakage. In this connection it should be borne in mind that on account of the movement of the strata it is harder to maintain pipe lines in proper condition in longwall than in room-and-pillar mines.

Only 9 per cent. of the coal produced in Great Britain is machine-mined. This looks odd to an American operator, especially when longwall working is so ideally adapted to machine work. It should be pointed out that (until the present war) a plentiful supply of skilled

miners has been available at all times, men whose fathers and grandfathers perhaps, were coal miners and who are thoroughly versed in their trade. This is somewhat different from the American situation, where skilled miners are not always obtainable and where European immigrant labor from countries that do not produce coal has had to be employed extensively to keep pace with the large growth in production that has taken place in the last quarter of a century.

The growth of coal output in Great Britain has increased only 15 per cent. since 1900, whereas the American production has grown 90 per cent. in the same period despite the scarcity of skilled miners.

The United Kingdom had about the same number of coal-mining machines at work in 1914 as were working in the United States in 1899. In 1914 the United Kingdom had 3093 machines, whereas the United States had 3125 machines in 1899. Our seams are thicker and the



**CUTTING WITH AIR MACHINE IN A TIGHT PLACE**  
Jib end, or rear, view of a Turbinair coal cutter at Pilsley colliery, showing how machine hugs the face and makes a clean cut. Note projecting gob on the right of cut

natural conditions are more favorable, and these facts together with others to be mentioned later enabled us to mine about 44,000,000 short tons with the same number of machines with which our British cousins produced only 27,188,000.

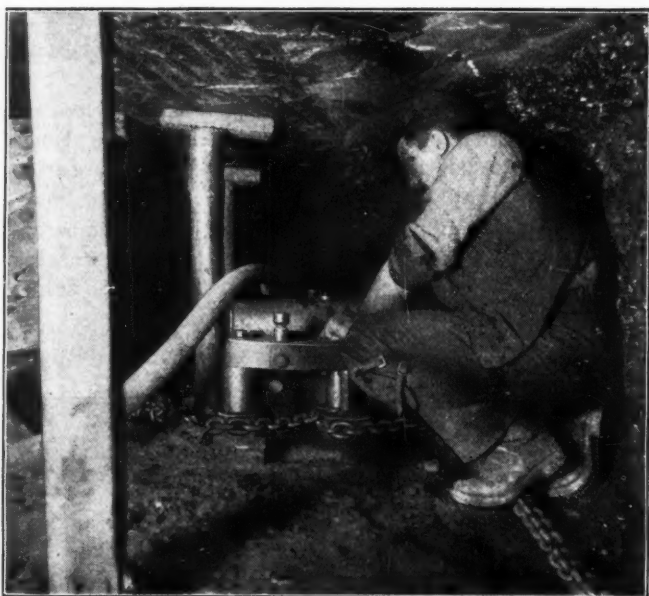
It is quite possible that the seams we mined in 1899 averaged twice the thickness of those mined in Great Britain in 1914, so the figures do not in any way reflect on British colliery management.

The British collieries have probably been hampered in many fields by the lower capacity of the coal-cutting machines hitherto available on the British market. The first of the Sullivan machines was installed in South Wales only in June, 1914, immediately before the war. Their efficiency has proved greater than that of those formerly in general use, and now after two years the colliery managers of South Wales have already replaced by Sullivan "Ironclads" almost all the machines previously employed.

In consequence it is believed that the production per machine in this district will soon show a material increase over the 1914 figure of 5432 short tons per year per machine. As the South Wales seams are somewhat thicker than those prevailing in some of the older fields the low tonnage per machine is rather surprising. It will be

\*Abstract from "Mine and Quarry," March, 1917. The figures used are for 1914, when the production of coal was only in part affected by the recruiting for service in the war.

noted that it is less than 22 short tons per day per machine on a basis of 250 working days to the year. In Scotland, where colliery managers were able to employ machines much better adapted to conditions, the production, in spite of low seams, was 10,000 long tons per machine per year; this compares favorably with our own 1914 figure of 13,231 short tons. The natural conditions in Scotland are infinitely worse than in South



FRONT VIEW OF SAME MACHINE IN 30-IN. PLACE

Though the props are set only 2 ft. 6 in. from the face the machine does not touch them. As a result, despite the bad roof, no crossbars are needed and the room overhead is not restricted

Wales, but on the other hand the relative percentages of longwall mining and narrow work should be considered in this connection.

Disk machines predominated in Great Britain in 1914. Of the 3093 mining machines 926 were post punchers. There were, therefore, 2167 rotary coal cutters in use, and of these over 58 per cent. were of the disk type, 27 per cent. were of the bar type, 13 per cent. were of the chain type and 2 per cent. were heading machines. The number of chain machines decreased between 1911 and 1914, and this fact, in conjunction with certain others, indicates that prior to 1915 the chain machine that was offered British colliery managers did not fill the bill.

The underlying reason for this appears to be that British manufacturers never succeeded in producing a thoroughly satisfactory chain cutter and seem to have devoted the bulk of their thought and effort to the other types. The fact that in the United States the rotary mining machines have almost universally been of the chain type does not appear to have caused more than one British manufacturer of coal cutters to investigate American mining machines, and this inquiry was made many years ago, when these machines had by no means reached their present excellence. Some British colliery owners think that it would not have been amiss had the British manufacturers of coal cutters followed developments across the water somewhat more closely. They might well have imitated the course of the American automobile manufacturers, who have followed with profit the development of the motor car in Europe.

Post punchers are used extensively in two British districts, while in others they are in use in a few scattered

collieries only. The ordinary puncher or air pick machine set on an inclined board is being operated at only one or two collieries in Great Britain.

The six divisions of Great Britain and Ireland adopted by the inspectors of mines are shown on the map. The total output of coal and coke, their average value per ton and the percentage of machine-mined coal, with the number of machines in each district, according to the latest report available, are given in the accompanying table.

The total production for 1914 was 297,698,617 short tons, or about 10 per cent. less than in 1911, 1912 and 1913. In 1908, 1909 and 1910 the production was almost the same as in 1914. Since 1900 the year of the lowest tonnage was 1901, with a production of 245,321,000 short tons, and the year of highest tonnage was 1913, when 321,922,130 short tons was produced.

To return to the map, each of the districts has one or two cities around which the district may be said to center—Glasgow for Scotland, Newcastle for the Northern Field, Sheffield and Nottingham for the Midlands and Yorkshire, Manchester and Liverpool for Lancashire and North Wales, Cardiff for South Wales, and Birmingham for the Midland and Southern field.

In the first, or Scotland, district the seams are low, the roofs fairly strong and the conditions sometimes somewhat difficult to meet. Coal-cutting machines are used in greater number in Scotland than in any other district, the latest figures showing 913, and with their aid nearly 22 per cent. of the output was mined. The Scotch usually cut a shallow undercut  $3\frac{1}{2}$  ft. deep, and their mines are so organized that the coal undercut in one shift is loaded out ready for the next machine shift. The faces are cut "to and fro" almost universally, and the disk machines employed have the disk in the center; thus turning is obviated, but "stables," or "stalls," have to be cut at each end of the face to accommodate the disk.

COAL PRODUCTION IN THE UNITED KINGDOM FOR 1914

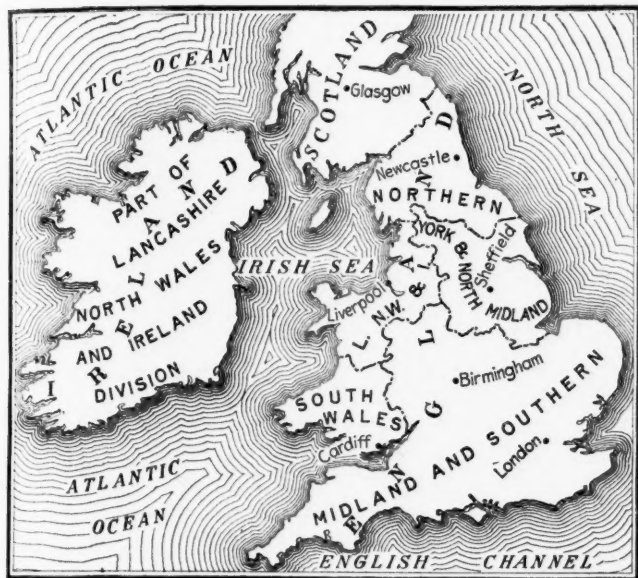
District	Production in Short Tons	Average Value per Short Ton at Mine	Coal Used To Make Coke in Short Tons	Number of Mining Machines	Per Cent. Machine-Mined Coal
1.....	43,509,045	\$1.95	3,165,265	913	23.4
2.....	58,670,732	2.17	9,715,270	702	6.8
3.....	76,169,888	1.95	8,354,605	725	10.4
4.....	29,454,358	2.22	4,151,694	399	7.9
5.....	60,345,322	2.64	2,738,421	131	1.2
6.....	29,394,774	1.95	10,559,382	223	5.5
Totals and Averages.	297,544,119	\$2.14	38,684,641	3,093	9.0

The coal seams at present mined in Scotland are about 2000 ft. below the surface, and the seams, in which machines are used, are thin. They run between 20 and 24 in., so careful management is essential to secure a profit. Electricity is the prevailing power in use underground, and it is difficult to understand how some Scotch pits could be run at a profit if they were compelled to abandon the use of electricity. To forbid it would indeed seem a hardship in a district where open lights are the rule rather than the exception, about 60 per cent. of the output coming from open-light pits.

The second, or North of England, district formerly exported a large portion of its coal to continental countries. This district is made up practically of only two counties—Northumberland, lying mostly north of the Tyne, and Durham, lying south of it. Northumberland coal is largely used by gas plants, while Durham is by far the largest producer of coke of any county in the United Kingdom.



The seams mined in these counties are found at a depth of 500 to 1500 ft.; there are a few drift mines. All the seams dip to the sea and are thinnest as they approach it. As in the other British coal fields, many of the thicker seams have been worked out. Electricity is much used at the coal face; in Durham perhaps 95 per cent. of the pits use safety lamps, and in Northumberland about



INSPECTIONAL DIVISIONS IN THE UNITED KINGDOM

The northern district embraces a large part of Yorkshire, thus reducing the York and North Midland district

85 per cent. Many post punchers are at work in this district, there being 451 of these machines. In fact the district leads all others in the number of percussive coal cutters used. There is much "bord-and-pillar" mining in the district.

The third, or Midlands, district is the largest producer of all and embraces a great manufacturing area. The Midlands collieries are all shafts, and the coal at present mined is found at depths ranging from 300 to 2500 ft. As much coal is mined by air-operated as by electrically-operated machines. Perhaps nearly half the pits are fiery and employ safety lamps. The seams now worked vary in thickness from 2 to 6 ft.

The fourth, or Lancashire, district embraces some of the largest manufacturing cities in England and the second largest city—Liverpool. The Lancashire mines are very fiery, and electricity is seldom used at the coal face. There are 399 percussive machines driven by air in use in the district. One pit is hoisting coal from a depth of over 2700 ft. The North Wales field is not extensive, and the production of Ireland (which is also included in this district) is small.

The South Wales district is famous for its steam coals. Nature, however, has not been kind in the matter of natural conditions, as the roofs are frequently bad and the seams faulted. South Wales consists of a series of valleys lying between hills of fair size. The coal has been subject to more geological disturbances than in most of the other coal fields of Great Britain. There are many slope mines in this district, but shafts predominate. More than 90 per cent. of the mines are fiery and use safety lamps. One seam has recently been opened at a depth of over 2700 ft. The better grades of steam coals come from near the surface.

Coal-cutting machines have been used less in South Wales than in any other district, but there are more seams which can be worked profitably by hand in this district than in some of the others; and as it is the newest coal field, the present coal seams are of slightly greater thickness and probably average more than 3½ ft. During the past two years chain machines have practically supplanted the bar machines, which formerly held the field. Compressed air is mostly used for undercutting, but much coal is still cut by electricity.

The biggest anthracite field in Great Britain is in the southwestern part of South Wales. There is, however, a little anthracite produced in Scotland and Ireland. The total production of anthracite in 1914 was 5,285,272 short tons. Machine mining has not made much progress in the anthracite field, but the Sullivan machine has been recently introduced and it has given excellent results. Cardiff, the shipping point for the South Wales district, is a city which has grown more rapidly than any other in Great Britain during the last generation. It is noted for its cosmopolitan population and the tremendous tonnage shipped, the docks being equipped with modern coal-handling devices.

In the South Wales district face conveyors are coming rapidly into use. The shaking conveyor of the Eickhoff type, which is now made in England, seems to have been found best suited to the conditions. As yet most of these conveyors are used on hand-mined faces, but some of the more progressive managers are working conveyors and machines on the same face, where roof conditions permit. The mine cars used in South Wales are somewhat larger than in the other districts, ranging from 15 to 25 hundredweight (1680 to 2800 lb.) capacity as compared with an average of 10 hundredweight (1120 lb.) capacity elsewhere. In some districts, the capacity of cars runs as low as 300 pounds.

As an indication of the disturbed nature of the formation in South Wales, it may be mentioned that one of the largest collieries in the district recently drove a rock



SAME MACHINE BEING PULLED AROUND FOR FLITTING

The cut has been completed and the machine is being removed. The coal seam is only 3 ft. thick

tunnel, and although the tunnel was completed six months ago, not a ton of coal had gone through it at the time of writing (September, 1916), as it was necessary to place steel girders a foot or less apart in order to hold the ground. The South Wales area produces about the same quantity of coal as the Newcastle district.

In the sixth, or the Midland and Southern, district nearly all the collieries are shafts, and the coal seams at present mined are from 1800 to 2000 ft. below the surface. The Black Country surrounding Birmingham comes in this district. The counties of Staffordshire, Warwickshire, Worcestershire and Gloucestershire are responsible for most of the output. In fact there is no coal mined in many of the counties shown in this inspection district. The coal fields of the county of Kent, which lies southeast of London, are receiving some attention at the present time.

The shafts (which are usually round) run from 10 to 24 ft. in diameter, the diameters of the later ones being usually either 22 or 24 ft. Some oval shafts and some of rectangular shape are in use. Practically all coal cutting in England is done on the night shift, loading and hoisting being done during the daylight hours. The length of a shift is usually eight hours.

### Rights of Landowner

BY A. L. H. STREET

A subscriber to *Coal Age* writes as follows: "A coal company 18 years ago entered on certain property and built a railroad, tiphouse, store, incline and tramroads, and made several openings and dumped several hundred tons of slate and rock without any written promises, but the owner has allowed this to be done on a verbal promise of the president of the company from time to time that he would be compensated whenever the company might have funds to pay the same. What could he recover? Can he recover two cents per ton, since this location was selected to work the veins by entering the property to the rise, making the haulage in favor of loads and giving the benefits of natural drainage?"

On the incomplete statement of facts presented, it seems quite likely that the landowner's rights have been largely lost through failure to obtain at the outset a definite written agreement from the coal company concerning payment for damages done to his land and for the privileges enjoyed by the company; and through long continued failure to press any claim against the company.

I am not advised as to the state in which the case arose, but it is reasonably safe to say that the landowner can recover nothing by way of damages or rentals excepting for use and damage arising during the last five or six years, since such actions are required to be brought within that time by the laws of most, if not all, the states. Items of the landowner's claim dating back of that time are doubtless outlawed.

The landowner should secure the assistance of an attorney in his county in obtaining prompt adjustment of his claims against the company, by demanding payment for damages and rentals already accrued, or satisfactory assurance for their payment, and a written contract to cover any future use of his property. Should the company refuse to make proper adjustment, it seems from the facts presented that there would be a clear right on his part to terminate the company's license to use the land.

There having been no agreement as to the damages or rental to be paid, the damages should be assessed with reference to the depreciation in the value of the land by reason of the company's use of it, and rentals should be based on the amounts usually paid to landowners in the locality for similar privileges.

### Air Is Sucked Into Mine Roof

BY M. D. COOPER\*

On Mar. 15, 1917, one of the firebosses of the Ford Collieries Co., on completing the examination of his section of No. 2 mine, reported what seemed to him to be a small blower in the roof over a new fall. Although a preliminary examination, made while the roof was still working, and consequently when it was unsafe to go up on the fall, seemed to indicate the presence of a blower, later examination showed that the sound was caused by suction.

The location of this interesting occurrence was in No. 29 room off the 6th right. The work of drawing the rib in this room had only recently been started, and but two falls had been made. The fan was driven so as to exhaust the air from the mine, consequently the suction that took place was directed against the action of the fan.

On going in to examine the place after it had been reported by the fireboss, we found an unusually large area of open roof above the fall. The break in the roof had occurred in the sandstone, hence the roof as exposed was of that material. It had an extremely smooth surface, and the fallen material on which we were standing consisted of large slabs of sandstone that had fallen flat—that is, without up-ending. As soon as we approached the location of the reported phenomenon, we heard a sound like that often noted near the face of a going entry where water is being forced through the roof. A similar sound may be heard coming from a leak in a steam radiator. All of us thought that in this instance also it would be found that water was coming through the roof. On close examination, we found no water at all. We did locate, however, two small fissures and from these it was that the sound was coming. These fissures in the sandstone roof were located somewhat away from the center of the open roof. They were parallel,  $3\frac{1}{2}$  in. long and  $\frac{3}{4}$  in. apart.

While examining these fissures, we placed our hands over them to stop the sound. At the same time, we felt suction. Therefore, we threw small quantities of water near the fissures, and were interested to see the water drawn up into them. This action took place in spite of the exhaust fan. When the place was reexamined by the fireboss next morning, he found that the noise had ceased.

The phenomenon was probably due to the formation of a cavity in the roof immediately above the material that had fallen. In all probability this cavity formed a vacuum. Later, the small fissures found were formed, and the mine air was drawn through them into the cavity.

Other reasons have been suggested as possible causes of the flow of air through the cracks in the roof. One theory advanced was that the temperature of the rock in the supposed cavity above the roof might have been lower than that of the mine air and hence have been partly responsible for the suction. Another explanation suggested was that when the roof fell, the surrounding strata were disturbed and a small body of water that had accumulated was caused to flow to a lower level, thus creating a partial vacuum in some part of the roof that was accessible to the mine air through the fissures mentioned. The phenomenon was witnessed by the mine foreman, the assistant mine foreman, two of the firebosses and myself.

\*Assistant superintendent and safety engineer, Ford Collieries Co., Curtisville, Penn.



## Pumping Culm from the Bank

Reclamation of culm, slack or other coal once regarded as worthless refuse has become highly popular—and profitable—within the past few months. The mechanical means employed to transport the refuse from the bank to the washery or other preparation plant have been many and varied. One of the latest machines to be successfully used is a steam pump, or rather a pair of steam pumps.

At the plant of the Illinois Hocking Washed Coal Co., at Marion, Ill., the water from the washery was originally drained into a lake. This water, of course, carried considerable small coal in suspension. This settled to the lake bottom. As time went by, a sedimentary deposit of coal was thus gradually built up, finally filling the original lake completely and, as a lake, obliterating it entirely and leaving only a deposit of coal where the waters of the lake had once been.

With the increased demand and advancing price of steam coal throughout the Middle West, it became advantageous to reclaim this accumulation. Accordingly, two No. 6 Nye steam pumps, manufactured by the Nye Steam Pump and Machinery Co., of Chicago, were installed. One of these was suspended from a tripod, or three-poled derrick, over the coal deposit and about 400 ft. from the washery. This pump discharges to a second just outside the washery building which delivers to a bin 65 ft. above the pump.

To enable the first pump to draw in the coal this material is washed down to the pump suction by a 2½-in. fire hose provided with a 1-in. nozzle. The pump, of course, was placed over the deepest portion of the original lake

and lowered until its suction opening was near the earth upon which the coal deposit was built up.

These pumps each have a 7-in. suction and a 6-in. discharge. Their capacity is estimated as 1000 cu.yd. of coal per day. They have, however, never been operated continuously for a full day, as all the coal desired could be secured in a much shorter time. Strangely enough,



DISCHARGE TO STORAGE BIN

the coal reclaimed from this deposit in the manner above described was found to be freer from sulphur and other impurities and consequently possesses a higher heat content per pound than does coal regularly produced at this plant.



THE PUMP AT WORK IN THE CULM BANK

# Patriotic Demonstration at Gary, W. Va.

BY FRANK H. KNEELAND\*

*SYNOPSIS—Popular demonstrations to show approval of a national issue are by no means confined to great cities. Adkins District holds a demonstration that, considering its population, eclipses the great preparedness parades of New York and other centers of population. Hungarian, Slav, Pole, Croatian, Italian and American, both white and colored, vie with each other in loyalty to the United States.*

*Vox populi, vox Dei*—the voice of the people is the voice of God. The town meeting is the cradle of democracy. From early colonial days down to the present, the town meeting in one form or another has been a potent factor in shaping the course and molding the destinies of the country as a whole. Whenever a crisis has arisen, a public difficulty has had to be faced, a public danger met, the town meeting has been the assemblage where the sentiment of the people has found utterance.

The expression "town meeting" has been here used in perhaps a broader sense than that usually accepted. It is here intended to cover any assemblage of citizens of a local community, convened by the community. Last fall's great preparedness parades in New York and other cities would thus be considered as amplified or special forms of town meetings—the citizens of the local communities without regard to politics or religion assembled, passed in review, and thus expressed their approval of a national program.

## A TOWN MEETING IN WEST VIRGINIA

But public demonstrations intended to express the conviction of the community are by no means confined to the great centers of population. Down in the coal fields of southern West Virginia, in the narrow deep valley of the upper Tug River, in Adkins District of McDowell County, there occurred on Sunday, Apr. 29, a patriotic demonstration, an amplified (I might almost say glorified) type of town meeting. The object of this assemblage was to show to the community and to the world that Adkins District was heart and soul, tooth and nail behind the government of the United States and the President in the present national crisis.

Adkins District has three industries—coal mining, merchandising and farming, mentioned in the order of their importance. The second of these is the logical outgrowth of the first; the third—except for gardens—is comparatively so insignificant as to be negligible. Gary, the largest town of the district, is the headquarters of the United States Coal and Coke Co., a subsidiary of the United States Steel Corporation.

As might be expected in a coal-mining community, Adkins District has a decidedly mixed population. Although native-born citizens (white and black) predominate, there is an extremely generous intermixture of foreign born. Among the foreign peoples here represented are many from the European countries with which this nation is now at war. Without doubt the predomi-

nant foreign element in Adkins District is Hungarian. As may be judged from what follows, these people lack nothing of the patriotic spirit shown by their neighbors and co-laborers, the Poles, Slavs, Italians, Greeks, and other peoples hailing from southern Europe and elsewhere.

The demonstration at Gary took the form of a parade followed by a flag raising and public speaking. The procession, with Dr. R. V. Shanklin as chief marshal, formed at the No. 2 works of the United States Coal and Coke Co., passed through Gary, and formed about the speakers' stand at the baseball ground near No. 10 tipple. The various elements of the parade were as follows: The Boy Scouts, Home Guards, Verhovia Aid Association No. 32, Red Men, Knights of Pythias, Tug River No. 4 Hungarian Lodge, First Catholic Slavish Union, Verhovia Aid Association No. 293, Alexander Petrofy Society, Verhovia Aid Association No. 208, Servian Society No. 240, National Croatian Society, Russian Society, J.O.U.A.M., Odd Fellows, Owls, Polish National Alliance, Tug River No. 3 Hungarian Lodge, Odd Fellows (colored), Masons (colored), Knights of Pythias (colored). These societies were followed by about fifty decorated wagons carrying school children bearing banners on which were such inscriptions as: "Don't be a slacker in the garden." "Do your bit; plant a garden." "Potatoes are as necessary as bullets; we can raise potatoes," etc. Following the wagons came automobiles and then still more automobiles, there being over 100 machines in line. It was estimated that the procession was over two miles long. Three bands, all home talent, furnished the music.

Upon arrival at the baseball park a large flag was raised by the Boy Scouts and about 500 school children, after which the crowd gathered in the baseball bleachers and about the speakers' stand.

## THE GOVERNOR COULD NOT ATTEND

The committee had been assured on Apr. 23 and again on Apr. 25 that Governor Cornwell would be present. At the last moment, however, a telegram was received stating that he would be unable to attend. Ex-Governor Hatfield had expected to be present, but he too found this impossible.

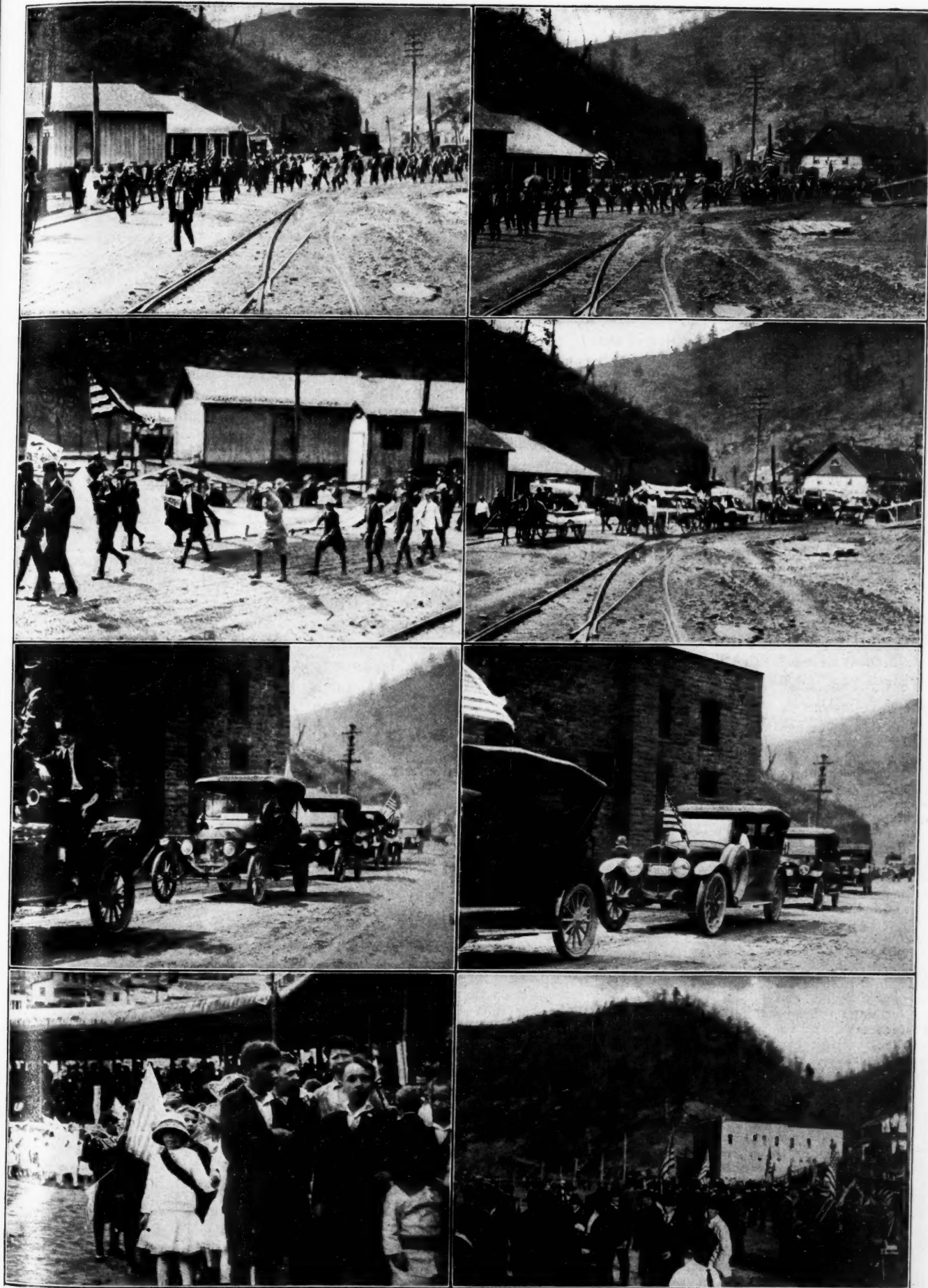
General Edward O'Toole presided and made the opening remarks. He made a patriotic appeal to all present, both native and foreign born, assuring the latter that they were now Americans and that as long as they conducted themselves as Americans they would be treated as such whether naturalized or not.

Following General O'Toole, Howard N. Evanson spoke, explaining the work of the American Red Cross. Members of the McDowell County chapter of this organization circulated through the crowd soliciting subscriptions. Somewhat over \$300, was raised at this meeting alone, while many other contributions were received later.

Judge Herndon, of Welch, W. Va., was the next speaker. He congratulated General O'Toole on the magnitude and earnestness of the demonstration. He called attention to the necessity of efficiency in the prosecution

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VIEWS OF THE PROCESSION, SCHOOL CHILDREN AND CROWD TAKING PART IN THE DEMONSTRATION

of the present struggle. He stated that it was efficiency that has made the United States Steel Corporation the mighty industrial organization that it now is. It was efficiency that has made wonderful fighting machines of the German and English armies. In war as in peace, it is efficiency that counts for most.

He then outlined the causes of the European War and told how this country, much against its wishes and desires, had been ultimately drawn into the struggle through the operation of the ruthless submarine piracy. He sketched vividly the steps taken by the President to avoid war, his unavailing efforts and his warnings to the Central Powers.

The foreigner came to this country to better his condition. Those who have taken the oath of allegiance will uphold that oath; those who have not, enjoy all the rights and privileges of the citizen and should therefore seek the best way possible in which to aid this country.

Every house, or nearly every house, in Adkins District now has a little garden. These should be enlarged as much as circumstances will permit. This country must in large measure feed our allies. Our enemies are remarkably proficient in the matter of food production, and we may well imitate them.

The industrial worker, whether on the farm in the factory or in the mine, is as valuable to the country as is the soldier in the trenches. The war will not soon be over, but when the work of this nation has been accomplished it is to be hoped that militarism and imperialism will have been crushed out from the earth, never to return.

#### THE WAR'S EFFECTS WILL BE FAR-REACHING

L. C. Anderson was next introduced. He spoke in part as follows:

Uncle Sam has again put on his fighting clothes, and from ocean to ocean we are once more singing the old war songs—"Rally Round the Flag, Boys," "Mine Eyes Have Seen the Glory of the Coming of the Lord," "Tramp, Tramp, Tramp, the Boys Are Marching," "John Brown's Body Lies A-Moldering in the Grave," and "Oh, Say Can You See By the Dawn's Early Light."

The effect of this war, both now and in the future, will be far-reaching. How great will be the benefits which will be secured to us, to our children, and our children's children, will depend on how well we do our duty now. The spirit of Americanism and democracy is contagious. It is well illustrated by the answer of an Italian friend of mine to my question as to how he felt about the present war. He promptly replied, "Me fight for free but no fight for king."

The United States has never entered a war except for freedom, and may we never keep out of a war when freedom is at stake. The Mexican situation was a disgrace, but America is now awake.

Not until the sun of civilization touched the rim of the western continent was the mass of mankind free. Now, just as the Israelites in the wilderness looked upon the serpent for deliverance, so the downtrodden of the earth look to America.

Judge Counts was next introduced and spoke in part as follows:

What is the cause of this gathering? We are at war, and it is the desire of those present to show to the world that they are loyal to this country. Uncle Sam has always given a good account of himself. When this war is over, our flag will wave not only over a free country, but over a free race. America has had no choice but to fight for its rights and for liberty. It was clearly demonstrated in the Spanish War that this country was one of the greatest powers of the earth.

Father Madert, Catholic priest of Gary, next addressed the meeting. He said:

This gathering gives evidence of our convictions and loyalty. Though our sentiments are divided, our loyalty is a unit. A discordant nation cannot stand. Regardless of

what happens in Europe, in America all peoples live in peace and harmony.

The establishment of this nation was not accomplished entirely by the native-born American. Kosciusko, Pulaski and Lafayette probably did quite as much to found the new commonwealth as did Warren and Greene and Washington. In the present crisis it is obvious that in union there is strength—"united we stand, divided we fall."

Rev. Benton, pastor of the Methodist Episcopal Church in Gary, was the next speaker. The salient parts of his address were as follows:

We are all going to stand together. We have entered this war that all men may be free. I had rather be a corpse than a coward. We fight a nation that has all but gained a complete victory, but victory must be wrested from this power in order that the freedom of the world may be established.

It is up to every man to raise every ounce of food possible. Any man who is too lazy now to cultivate a garden is a traitor, not only to his country but to the cause of world democracy as well. May everyone find his proper place in this struggle, and, having found it, fill it to the best of his ability.

Editor Whittico, of the *McDowell Times*, spoke for the colored citizens. He stated emphatically that come what would the colored people were loyal to the nation and its cause. They were loyal to the land while in chains, why should they be otherwise when free?

The population of Adkins District is about 12,000. The crowd taking part in the demonstration was estimated variously at from 3500 to 5000. It is probable that fully 4000 people, or 33 per cent. of the population, were present at the ball grounds.

This number would have been much larger had the weather been fine. Rain, actual and threatened, kept many from participating.

This demonstration is one of a series that will be held from time to time in order to keep public sentiment aroused, to impress upon everyone the necessity of concerted effort and to keep burning in alien breasts the fires of loyalty for the land of their adoption—a land which not only affords them the protection of its laws, but during proper behavior guarantees even to alien enemies here domiciled practically all the rights and privileges of American citizenship except, of course, the ballot.

### Traffic on the Great Lakes

The following is a summary of the Lake coal traffic through the Sault Ste. Marie canals, rates, etc., since 1887:

Year	Freight Rates	Value		Gross	Tons
		Anthracite	Bituminous		
1887	\$0.90	\$3.50	\$3.50	\$4,735,454	1,352,937
1888	.70	* 3.50	* 3.50	7,367,644	2,105,041
1889	.45	* 3.50	* 3.50	5,702,190	1,629,197
1890	.45	* 3.50	* 3.50	7,619,238	2,176,925
1891	.43	* 3.50	* 3.50	8,776,362	2,507,532
1892	.41	* 3.50	* 3.50	10,164,931	2,904,266
1893	.40	* 3.50	* 3.50	10,528,420	3,008,120
1894	.40	* 2.93	* 2.93	8,191,917	2,797,181
1895	.37	4.25	2.40	6,993,351	2,574,362
1896	.32	4.75	2.50	8,452,073	3,023,340
1897	.30	5.50	2.60	9,456,824	3,039,172
1898	.25	4.75	2.40	10,334,461	3,776,450
1899	.46	5.70	2.60	12,854,278	3,940,887
1900	.44	5.25	3.00	14,620,840	4,486,977
1901	.38	5.60	2.90	15,492,226	4,593,136
1902	.45	6.25	3.25	16,570,398	4,812,478
1903	.53	5.80	3.15	24,898,407	6,937,633
1904	.40	5.50	2.60	19,657,221	6,454,869
1905	.33	5.60	2.75	20,706,302	6,509,056
1906	.35	5.75	2.50	25,136,044	8,739,630
1907	.31	5.80	2.60	34,461,584	11,400,095
1908	.30	5.47	2.50	28,868,837	9,902,460
1909	.31	5.47	2.50	29,044,855	9,940,026
1910	.31	5.30	2.75	41,392,801	13,513,727
1911	.31	5.85	2.75	48,552,057	15,332,875
1912	.30	6.00	2.85	42,303,871	14,931,594
1913	.30	5.85	2.70	58,927,341	18,622,938
1914	.30	5.85	2.70	46,173,087	14,487,221
1915	.30	5.80	2.70	42,359,320	13,357,058
1916	.30	6.10	3.05	55,916,681	16,123,119

\* Average price for anthracite and bituminous coal combined.



# Coal Mining in the Transvaal

By C. C. SMITH\*

**SYNOPSIS**—*Labor conditions in South Africa are unlike those existing anywhere else. A white man may not labor, nor may he lose his temper. "Boys," native blacks, do all manual work under the direction of foremen and subforemen. Carbide hand lamps are used chiefly, although the native sometimes uses the cap lamp. As he wears no cap, he hooks the lamp into his hair.*

The South African mining engineer is confronted with a labor proposition unlike that in any other country. In no other place is the line drawn so closely as to what constitutes a "white man's work." If a new arrival oversteps this line, the nearest white man informs him of his error.

All manual work is done by the native negroes, who have the greatest respect for their white bosses so long as the white man's actions correspond with their ideas of his sphere of life. He must be firm, but he must do no work himself; and he must be patient and not lose his temper. The latter is the hardest of all accomplishments for a new man in the South African mines, for the native when not understood is often highly provoking.

The "boys" (all the native negroes are so called regardless of age) are hired in their native villages by recruiting agents who furnish workmen for the various mines and are generally contracted for a period of six months or a year. At the end of this time the boy can either enter into another contract or return home. The majority go home, but there are many boys who have quite a few years' service to their credit.

The Transvaal coal mines are ideal in many respects, and those in charge of these operations have made wonderful records with this unskilled labor.

## THE COAL AVERAGES 6 FT. THICK

The principal measure now being worked will average 6 ft. of marketable coal and is overlaid by a seam of bony coal that makes an excellent roof. The bottom, except where dikes cut the seam, is level. With but few exceptions, where the deeper seams have been worked there is no gas and but little water. Above the bony coal, which is about 10 ft. thick, there is from 100 to 150 ft. of cover. Most of the mines are opened by slopes, and rope haulage is employed exclusively.

The white staff at a mine consists of the compound manager, mine manager, under manager, top boss, electricians, mechanics, miners, shotfirers and the office men.

The compound manager is a certified official who has charge of the natives' quarters, called the compound, and is responsible to the Government for the treatment given the boys. He must be able to speak the various native languages and settle all disputes between the boys and their white overseers.

All the white miners have positions corresponding to foremen or assistant foremen in this country. The system carried on in these mines is determined by the unskilled labor and the stringent laws that have been enacted to protect the natives.

All the mines are worked on the bord and pillar system, and mining machines are operated in practically all of them. Overhead rope haulage is used exclusively, and the cars hold about 500 lb. Steel ties and rails of 12 or 16 lb. to the yard are employed. As all rails are imported the cost is high, and rail of this weight is installed even on the main haulage in most mines.

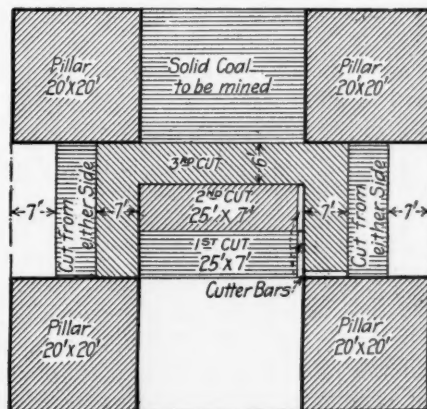
The question of running machines has been given a great deal of thought, as the coal must be undermined and the unskilled labor at hand made this phase of production important.

The first machines were American air-driven board punchers (Sullivan) and the average day's work was 20 ft. of face to a depth of 5 ft. This low rate of cutting was due to the unskilled labor, and when the post punchers were developed they replaced the board machines rapidly. No attempt was made to "square the cut" with the post punchers, and two boys would cut two places 20 ft. wide in one shift of 10 hours. They employed a 10-ft. extension bar, and the cut would average about 7 ft. deep in the center.

As the mines advanced the air-line losses reached a high point. Some companies installed electrically driven haulage units, and the natural conditions being desirable, chain machines were tried.

One of the companies installed an American-made (Sullivan) continuous-cutting chain machine, using chain propulsion and friction drive. This machine overcame the disadvantages that had been previously encountered, as the friction could be set so that the machine could not be damaged by the unskilled labor.

Since the first machine of this type was given a trial the other mines have adopted them as rapidly as possible. One of the features that especially appealed to the



METHOD OF WORKING EMPLOYED

operators in this district was that the power plants (compressed air and electric) on this type of machine are interchangeable, and it was not necessary to wait until sufficient electrical power was available to obtain the increased efficiency possible. The air-driven machines are equipped with spiro turbine air motors that can be replaced by alternating- or direct-current electrical motors. The general practice is to install alternating-current-driven machines, as no haulage locomotives are employed.

The system of mining, as stated above, is the bord and pillar, and the general practice is to make the pillars

\*108 Beach St., Joliet, Ill.

20 ft. square and the bords 25 ft. wide where chain machines are used and 20 ft. wide where the air-driven punchers are still utilized. No attempt has been made to pull pillars, but the pillar coal is not lost, as it can be mined when more skilled labor is available.

The coal is undermined as shown in the accompanying drawing. While a 7-ft. 6-in. cutter bar is used it was found satisfactory to use this system. The miner in charge of the district makes a chalk mark on the ribs to show the machine men where to cut.

After the first or second cut is made, two rib shots and a center shot are fired by the shotfirer when the day shift has left the mine. The natives drill the holes but are not allowed to handle explosives.

The third cut gives a better grade of lump coal and requires less explosive per ton secured. The section left in the crosscut also gives a good lump coal. This mining is put in from the side most convenient.

After the coal has been undermined and shot, the place is inspected by a miner. The coal is then loaded out by the

boys. They load the cars and push them to the nearest haulageway, where they get an empty and return to their place. This tramping distance will average about 200 ft., and the boys will load 6 to 10 tons each per shift.

Where open lights are used, the "full shift" carbide lamps are employed most extensively, but some of the boys use candles. As the natives do not wear caps, cap lamps are not made use of generally, although I have seen negroes with cap lamps hooked in their hair!

The general practice in the coal mines is to work 10-hour shifts and to have each miner in charge of from 30 to 60 boys. Seldom does the average per boy run below 5 tons per shift.

The boys receive 36c. per shift, and the cost of the compound and recruiting fees brings the cost per boy per shift up to 50 to 60c. The white men seldom receive less than \$5 per shift.

Except for mines in the developing stage, outputs of 1000 tons or more per shift are customary, and most of the mines put out over 2000 tons per shift.

## Byproduct Ovens at the Mines

BY J. W. KNOWLTON\*

*SYNOPSIS—It is the present belief that by-product ovens can be operated profitably only at centers of population, or of manufacturing, where a ready market exists for the gas evolved. The failure, or partial failure, of natural gas may render it feasible to pipe the oven gas long distances, utilizing any surplus in the manufacture of fertilizer. For this product a wide and increasing market exists.*

Almost every one is familiar with the possibilities of the byproduct oven where it is feasible to sell the surplus gas, as is the case in large cities or steel mills. This practice, however, involves heavy freight bills that amount in most cases to more than the cost of mining the coal, in order to bring it to the ovens; also there are the troubles incident to car shortage. It is probably not the last word in byproduct oven development.

As conditions stand today, it seems as if the only thing the coal-mining companies can do is to keep on shipping coal to the byproduct-oven plants, as these are located and built at the various centers of population. In the meantime, natural gas will continue to become more scarce, until the price will be such that it will pay the coal-mining companies to make gas out of their coal and pump it through the lines constructed for natural gas. Thus will be saved not only the large amount of money invested in these pipe lines, but also a market will be found for surplus gas, which does not exist today in competition with natural gas.

If the foregoing view of the situation be correct, it would seem to be wise on the part of the coal-mining companies to wait for a time in the future when they could sell oven gas in competition with natural gas, and that for the present nothing should be done further than merely to mine and prepare the coal for market.

Here is where chemistry can step in and show the coal operators that it is not necessary to remain passive until the price of natural gas is such that oven gas can be made to compete with it.

Three-fourths of all our manufacturing is based on chemistry, and this fact must be recognized if we are to extend our business and continue to make money. It is an exceptional plant or process that does not rest fundamentally on chemical control and, if one is found that does not, something is probably wrong with it for that very reason.

Chemical control backed by flexible banking facilities can do the seemingly impossible. We are now entering on an era in business when chemical industries and chemical control will need vast sums of money for development; and during the next ten years our industries are going to be improved and enlarged along chemical lines. The whole trend of the economic world is toward combination and coördination, and that nation is the most successful which sets itself parallel with great economic truths and moves harmoniously with the cycle of nature.

Without natural-gas competition it would seem probable that economics would bring about the following changes: A chain of centralized coking plants from which gas would be distributed to consumers, any excess being used for the generation of electric power for the fixation of atmospheric nitrogen. The coke alone, or mixed with briquets, would replace the coal of the present. Ammonia sulphate would take the place of imported sodium nitrate for fertilizer, while tar, oils and benzole would supply motor fuel.

With the price of natural gas low, as at present, some way will have to be devised for using the surplus gas at the mines at a profit throughout the more or less indefinite period during which the natural gas holds out. In seeking a solution for this problem, it is well to take market conditions into consideration. What element is most in demand? With Europe pouring her gold into this country, it surely is not this precious metal. What

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is Europe taking from America in exchange for her gold? Many things; but most of all, nitrogen in the form of foodstuffs.

How, then, can the coal-mining companies prepare nitrogen so that it will be available for absorption by growing plants? What methods exist for converting the inexhaustible supplies of free nitrogen in the atmosphere into compounds that contain the element in a form available for plant food?

The following methods may be used for effecting this change: (1) The nitrogen may be converted into calcium cyanamide; (2) it may be converted into nitric acid and then into nitrates; (3) ammonia may be formed by heating a mixture of nitrogen and hydrogen under high pressure; (4) nitrides of certain metals such as aluminum may be formed by the direct union of the two elements, and from these nitrides of ammonia may be generated through the action of steam.

The first method seems especially adaptable to the raw materials that would be available at a byproduct-oven plant at the mines. I will not go into details in this article, but roughly, calcium cyanamide is prepared commercially as follows:

First, calcium carbide is made by heating a mixture of coke and limestone in an electric furnace ( $\text{CaO} + 3\text{C} = \text{CaC}_2 + \text{CO}$ ). A mixture of coke and limestone is fed into a furnace connected with alternating current, the amperage being so regulated as to give a temperature of about 2000 deg. F. At this temperature carbide is formed, and it settles to the bottom of the furnace in a liquid state.

#### THE MANUFACTURE OF CALCIUM CYANAMIDE

Second, calcium cyanamide is formed by passing nitrogen over calcium carbide ( $\text{CaC}_2 + 2\text{N} = \text{CaN}_2\text{C} + \text{C}$ ). The nitrogen is formed by passing air over sodium hydroxide to remove the moisture and carbon dioxide and then over red-hot copper to remove the oxygen. The nitrogen so obtained is passed over carbide packed in tubes through which extends a carbon rod. The heat necessary for the reaction is generated by passing an electric current through the carbon rod. The reaction takes place most readily at about 1200 deg. F.

The two methods just described are now in use commercially.

It seems certain that the compounds so formed, or similar ones derived from atmospheric nitrogen, will eventually replace the sodium nitrate and the ammonium salts that are now the chief nitrogenous products used in the manufacture of fertilizers.

With the byproduct-oven plant at the mines, and the usual proximity of limestone deposits, calcium cyanamide could be made at a low cost through the utilization of surplus gas. The demand for this product would be practically unlimited, and would become greater as the cultivation of land became more intensive.

I have not taken up the other products of the byproduct coking plant for the reason that they have been written up in detail. They can be taken care of at the mines as well as at the centers of population. When byproduct ovens are brought to the mines, it will be but another illustration of the tendency to concentrate manufacturing industries in large units, thus permitting the application of the highest grade of management and engineering skill.

I know of mines within easy access of limestones of unrivaled purity, where 4 ft. of coal is being mined and 2 ft. left in the ground because it is too high in ash and sulphur for the market. In fact, this is taken down in the headings and thrown on the dump, where it soon catches fire and burns. This coal would make excellent producer-gas fuel which, with the limestone, would furnish the raw materials for the economical manufacture of calcium cyanamide. Not only would this result in the saving of this coal, but the whole 6 ft. of coal could be mined, 4 ft. being sold on the market as good coking coal and the rest sent to the producer, resulting in much cheaper fuel coal than is secured at present. The demand for nitrogenous products will soon be as great as that for coal itself. Of this there can be no reasonable doubt. A combination between lime and nitrogen is almost ideal as plant food, and under present world conditions the demand for it will soon be practically unlimited.

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### Training Mining Men for War\*

So foreign was the idea of military service to most of the members of the Canadian Mining Institute, that during the first stages of the war many joined units that gave them no opportunity whatever of putting to use their previous experience. Partly for the purpose of correcting this waste, the Engineers Training Depot, St. Johns, P. Q., was organized. It has now been in existence for about two years. The difficulties to be overcome in creating a military and technical training organization in the most exigent of circumstances were by no means light.

It is the intention here merely to outline my own impressions of the depot (sadly mishandled word!) after a few weeks of training. No doubt some of these impressions are wrong, and all will be modified by the future. Yet it is hoped that they will enlighten the civilian darkness of those members of the Institute who will have the good fortune to follow us here.

The newly arrived subaltern, though welcomed (discreetly or otherwise) by his fellows, remains for the first few days a dismal derelict, a military maverick. He is painfully conscious of being neither fish, flesh nor good red herring. This engenders a temporary loss of self-respect. Also, however, it brings an ardent resolution to make oneself like unto other men. Of course much of this suffering is due to causes purely subjective. The neophyte is his own harshest critic. And, painful though this may be, these preliminary pangs are necessary. They presage the birth of the spirit of military discipline, and also the development of hitherto unsuspected muscles. Both processes, the process spiritual and the process physical, are of inestimable value.

#### THE CHANGE WROUGHT BY A FORTNIGHT'S TRAINING

The change wrought by a fortnight's training is not merely visible—it is startling. Readjustment to strange conditions may be rapid or slow. This is primarily a function of temperament and possibly of age. But it is inevitable. This does not imply that there is a leveling or standardizing of the human units. It means simply, that all must acquire a certain proficiency in things mili-

\*By J. C. Murray in Canadian Mining Institute "Bulletin," February, 1917.

tary and must also conform, in matters of usage and etiquette, to certain irrefragable rules.

Mining men need be told nothing of the ethics of the game. Loyalty to one's official superiors, telling no tales out of school, helping a friend or acquaintance or a friend's friend, and avoiding that habit of speech to which the name of a natural pastoral fertilizer has been applied, are cardinal ethical principles in mining as much as in the army.

Military engineering methods may be described fairly as field expedients. The engineer is taught how to tie knots and lashings, how to devise and erect bridges, derricks, trestles, etc.; how best to utilize available material; how to construct trenches, and how to do a thousand and one other things necessary in the field. The need of speed is impressed on him from first to last. Military engineering has its own peculiar terminology, sometimes extremely confusing to the lay mind. In general the methods chosen are the shortest and most effective means to the desired end. In addition to engineering, the course includes insufficient doses of infantry training, physical training, military law, musketry, equitation (the standard joke is to call this class "aviation") and other miscellaneous subjects.

Since the training is preponderatingly practical, and since it overlaps and often duplicates actual experience in the remoter mining regions, it seems particularly appropriate that the Canadian engineers should be the branch of the service chosen by the majority of mining men. Both in the ranks and among the commissioned officers there are at St. John's mining men from every quarter of the globe.

Indeed, the cosmopolitan character of the officers' classes is phenomenal. A small draft of officers sent to England the other day included mining engineers from Burma, Siberia, Cobalt and British Columbia. Similarly, the classes at present in training are made up in part of men who have come here from the remotest corners of the earth.

Among the rank and file an even more marked heterogeneity is observable. Men of education and refinement are to be found in every company. And, be it noted, these men look upon themselves as neither heroes nor martyrs. Posing and squealing are not encouraged in the Engineers.

In effect, the *raison d'être* of the Engineers Training Depot is the speediest possible conversion of civilians into efficient military men. So to balance drill, practical training and lectures, as not to neglect either the purely military or the technical sides of the course is a problem of exceeding difficulty. However, that balance has apparently been achieved and is being maintained. Not that the course is perfect. Many a subaltern in training could proffer suggestion after suggestion. Luckily, he is restrained by a right and proper fear of God, early instilled in the bosoms of all of us.

That the course established at the depot makes a strong and peculiar appeal to mining men goes without saying. The work, alike for private and for officer, has a singular attraction. It is creative and direct. Resourcefulness and expedition count enormously. A high premium is placed upon initiation and efficiency. The man who has followed the "bush," or has prospected, or has done general work about the mine, makes a much-desired and much-appreciated recruit.

## Tentative Program of the Kentucky Mining Institute

The Kentucky Mining Institute will hold its sixth annual meeting on May 18 and 19, at Lexington, Kentucky.

On Friday morning, at 10 o'clock, a session will be held at the Phoenix Hotel, and the address of welcome will be made by Hon. James C. Rogers, mayor of Lexington, after which the following papers will be read: "Accident Prevention by the Elkhorn Division of the Consolidation Coal Co.," by L. L. Holmes, mine inspector for the Consolidation Coal Co., Jenkins, Ky.; "Some Considerations of the Applications of Alternating Current in Coal-Mining Work," by Clayton T. Rogers, of the Westinghouse Electric and Manufacturing Co., Charleston, W. Va.; "Discussion of Kemble's 'Choosing Employees Test,'" by Charles W. Strickland, chief engineer of the West Kentucky Coal Co., Sturgis, Ky.

The afternoon session, which begins at 1:30, will be held at the College of Mines. The following papers are to be presented: "High-Tension Current in Mines," by J. Rowland Brown, engineer of the Ohio Brass Co., Mansfield, Ohio; "Prospecting and Proving Eastern Kentucky Coals," by Mr. Roehrig, mining engineer, of Huntington, W. Va.; "Results with Alternating Current on Coal-Cutting Machines," by F. W. Copeland, of the Sullivan Machinery Co., St. Louis, Mo. From 4 o'clock to 6 afternoon tea will be served by the Women's Club of the University of Kentucky for the ladies of the Institute.

On Friday evening, at 7:30, at the Phoenix Hotel, a smoker will be tendered to the members of the Institute and their friends by the Board of Commerce of Lexington. R. Dawson Hall, associate editor of *Coal Age*, New York, will address the members on "The Bituminous Coal Industry During the War."

The Saturday morning session, starting at 10 o'clock, will be held in the ballroom of the Phoenix Hotel, at which important matters will be brought up. It is urged that all members be present at this session.

At 1:30 Saturday afternoon an interstate first-aid contest will be held at Stoll field. It is expected that from 15 to 20 teams will participate in the contest. The opening remarks will be made by Governor A. O. Stanley.

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## May Circular of the Reading Co.

The prices given in the accompanying table, from which a discount of 40c. per ton is allowed during the current month, represent the new circular on domestic sizes of the Reading Co. effective May 1. The circular states that the company will make every effort to fill all orders promptly, but that they are only accepted subject to its ability to do so, and further that all unfilled orders will be cancelled at the end of the month. The company also reserves the right to change prices at any time without notice, and orders sent in will not be considered as binding. The following are the prices on various grades and sizes:

	Mahanoy and Shenandoah	Locust Mountain and Schuylkill White Ash	Shamokin	Lorberry and Schuylkill Red Ash	Lyk's Vale Red Ash
Egg .....	\$4.45	\$4.45	\$4.45	\$4.65	\$4.90
Stove .....	4.70	4.70	4.70	4.90	5.30
Chestnut .....	4.80	4.80	4.80	4.90	5.30
Pea .....	3.10	3.10	3.10	3.20	3.55



## War Sidelights

*Under this heading in Coal Age each week we hope to publish items relating to war measures as they affect the coal-mining industry. We earnestly invite all our readers to send us interesting notes covering happenings which bear on the war, either in a military or an industrial way.—Editor.*

Employees of the Dodson Coal Co. at Morea colliery have, by popular subscription, raised sufficient money to purchase a motor ambulance, which will be presented to the French Red Cross Society.

Joseph Miller, a foreign miner of Dott, W. Va., was recently arrested for making improper and slurring remarks concerning the Government and the President of the United States. He was released after trial, there being insufficient evidence to convict him of the charges.

To get war money quickly the payroll must be taxed and the ability to expand the payroll increased. This may be called inflation, or what not, but every successful war is won as a popular war, with the burden popularly borne, and with enhanced returns to both capital and labor.

During a flag raising at the Oneida colliery, near Pottsville, Penn., two employees of the coal company upon being asked for a contribution toward the cost of the flag made indecent and derogatory remarks concerning the national emblem. As a result they were arrested and lodged in jail on a charge of treason.

Three miners were recently arrested at Gallipolis, Ohio, on a charge of having in their possession 22 kegs of powder, which were said to have been stolen from the coal washery of the Hickey Transportation Co. The police allege that the men had the powder near a railroad bridge when arrested.

All the Kanawha River operators in West Virginia, including the Pittsburgh Coal Co., through Capt. E. A. Burnside, master of transportation for the Campbells Creek Coal Co., recently offered to the United States Government all towboats, barges and the output of mines, to be used whenever and wherever they are needed in the present war.

Several of the large coal companies in western Pennsylvania are employing girls and women to take the places of men enlisting in the national service. One company is placing girls in the drafting room to do tracing and similar work. The Pennsylvania Railroad Co. at Altoona is working on a plan which will enable it to replace men with women in many branches of its organization.

Sentries of the 13th Pennsylvania Infantry recently detected an intruder in the water tower which drains five of the largest of the Lackawanna mines. After a pursuit,

during which several shots were fired, the man was captured near a creek. Before being taken, however, he was seen to throw a number of heavy objects into the stream, and the water course is being dragged to recover them. The man, who said he came from New York, gave his name as Saphia Kitzguard.

Employees of the Barnum colliery recently held a flag raising, about 2000 people being present at the exercises. Capt. W. A. May, of Scranton, Penn., president of the Pennsylvania and Hillside Coal and Iron companies, was unable to attend on account of being called to Washington. He was represented by his assistant, F. H. Coughlin. The Montedoro band furnished patriotic music and also took part in the program. Various local men made speeches, and the school children of Duryea sang patriotic selections and gave a flag drill.

In our issue of May 5, p. 784, we mentioned in this department that the men at the Beaver Brook Colliery of Weston Dodson & Co. had contributed enough money to maintain an ambulance in the American Ambulance Corps in France. Our attention has been called to the fact that this money was contributed not only by the Beaver Brook Colliery but came from all the employees of the Weston Dodson people, including the Morea and Locust Mountain Collieries.

Since the declaration of war a close watch has been kept on certain aliens in various mining communities. It is estimated that there are about 3000 Austrians in the vicinity of Irwin, Penn. The deportment of these men has been exemplary. At first they were told by certain of their leaders that the Government would confiscate their bank accounts, and many thousands of dollars were withdrawn. This money has now been all returned. Another noticeable circumstance is that the foreigners have "cut out the booze." Hotel proprietors and keepers of bar-rooms say their receipts have been cut in half. This is regarded as a decidedly favorable symptom.

If the ratio of enlistments in the army and navy from the mining sections around Marion, Ill., continue as they have for the past few weeks, there will be a decided decrease in the tonnage of coal produced. The town of Hurst has lost almost all its young men. It is said that every physically perfect youth from 18 to 30 years of age has enlisted. Local towns with populations from 3000 to 8000 show enlistments from 200 to 300 per cent. greater than those from manufacturing centers and large cities. Large numbers of foreigners—Italians and other races from southern Europe—are now enlisting, and the outlook is a serious one for mine operators.

Owing to the scarcity of labor throughout the mining regions of West Virginia and other states, coal men are advocating a plan whereby the Government would draft men for work in the mines, as is proposed for farms and

the munition industry. It is pointed out that only in this way will sufficient fuel be secured for the use of the Government, the railroads and the industries which require large amounts of coal. Ever since the war started bituminous coal companies have been handicapped by a shortage of labor. As a result the production of coal has been greatly reduced, and coal companies are unable to increase their output on account of the scarcity of men.

On Tuesday evening, May 2, the employees of the Consolidation Coal Co. at Jenners, Penn., had a flag raising, at which about 1500 people were present. Seven different foreign societies attended and there was much enthusiasm exhibited. Speeches were delivered by District Attorney Virgil R. Saylor and Capt. Curtis Truxall of Company C, 10th Reg., N. G. P. A 14 x 20-ft. flag was hoisted on a pole 83 ft. high by the following men, who have enlisted in the army and navy from Jenners: Henry Mumper, Frank Hawkins, Andy Surrock, Harry Luzader, Roy Hawkins, Gus Schleger, Harley Walton, Ray Keith, Jack Hite, Robert Garber, Mike Sedeline, John Host, Pete Pinzinik, Martin Sabosky, Harry Hutzko, Joe Grass, P. C. Willetts, Colow Cady, Paul Barnhart and Jim Gogley.

Organization of the Keister Community Farm Club, having as its object the increase of production of garden plots and the interesting of boys in farm work, was organized recently at a public meeting in the office of the Lincoln Coal and Coke Co. A plot of ground containing six acres has been set aside, and each boy will be employed at regular wages to cultivate a certain portion. The community garden plot will be under the direction of farm boss Edward Franks. It is intended especially to interest boys in gardening whose ages range from 12 to 16 years. All those hired will be required to work 4 hours per day, and they will be paid at the rate of 5c. per hour, drawing pay at semi-monthly intervals with other employees of the Lincoln company. The plot will be planted one acre to potatoes, one to cabbage and one to navy beans. The rest will be planted to corn, beans and pumpkins. When the crop is gathered and disposed of, the proceeds, after deducting expenses, will be divided equally among the youthful farmers. Besides this community plot, 13 acres have been planted as gardens by the various employees of the company.

President E. E. Loomis has made an appeal to the miners employed by the Lehigh Valley Coal Co. to forego their usual summer picnics and outings because of the nation's need for coal. He directed attention to the following words in President Wilson's call for service: "To the miner let me say that he stands where the farmer does; the work of the world waits for him. If he slackens or falls, armies and statesmen are helpless. He also is enlisted in the great service army." Mr. Loomis continued:

We are going to face the greatest demand for anthracite in history, and every man must do his part if the national need is to be met. Every man must work steadily if this is to be accomplished. He must be willing to make all necessary sacrifices. I can think of no better sacrifice for this year at least, than that mine workers give up the holidays they have taken at frequent intervals in the past. The collieries must be operated to their fullest capacity. A big step in this direction will be the postponement this year of the excursions and picnics of Sunday schools and the religious, patriotic and fraternal organizations that draw their principal attendance from mine workers.

There is another thing which I hope we can avoid this summer. I refer to the observance of those holidays in honor of saints whose feast days the churches have not made holy days of obligation, or upon which they do not particularly urge church attendance. I respect every man's religion and believe he is entitled to practice it as he sees fit, but with the bishops and clergymen of all denominations praying for the success of American arms I believe each man is doing honor to himself and his creed in working for his country. On the days when attendance at church is not obligatory mine work instead of a holiday will mean much to the nation's fuel supply.

A meeting was held at the Bankers Club, 120 Broadway, New York City, on May 8, at the call of C. H. Sherrill, acting for Governor Whitman of New York. It was attended by the leading representatives of the various industries centered in New York City and by the trade press. Mr. Sherrill explained that 10,000 men would be needed to put the state militia up to war strength and that these would be called immediately. Governor Whitman desired to have cards filled so that he could call on that number of men instantly on receiving information from the War Department. In order to distribute the opportunity among the industries, each trade is asked for a certain number of men, proportional to the number engaged in the industry in the State of New York. The coal trade is asked to enroll 200 men. At present writing, the committee for that purpose is not formed. Meanwhile, it may be pointed out that as the militia will accept men between 18 and 45, whereas the conscription provisions will not cover so wide a range, it would be well for all those between the ages provided by the militia bill and not between ages which will be covered by the conscription bill, who desire to join the army, to take this opportunity to accept service for the country. The militia being in a better state of preparation will probably see service first. Information can be obtained of Roger W. Allen, 30 Broad St., New York City.

An offer of prizes to the boys of the Connellsville High School who shall produce the largest number of bushels of potatoes has been made by Clay F. Lynch, general superintendent of the H. C. Frick Coke Co. This offer of three cash prizes aggregates in amount \$150. The terms and prizes are as follows: First, \$75 to the boy who will produce the largest number of bushels of potatoes during the coming season; second, \$50 to the boy raising the largest number of bushels of potatoes per acre during the coming season; third, \$25 to the boy raising the second largest number of bushels of potatoes per acre during the coming season. The conditions imposed are the following: No prize will be given unless at least 10 per cent. of the boys in the high school enter. The area of the plot or garden cultivated by any one boy must not be less than 10,000 sq. ft. The boys shall determine the size and location of the plot or plots to be cultivated and shall furnish the plots, tools, seeds and fertilizers. The boys must pledge themselves to hire no one to do their work and to accept assistance from no one except for the first plowing. It has been estimated that it will cost a boy about \$15 to do his planting. An earnest attempt will be made to induce at least twenty of the high school boys to enter this competition. E. R. Floto, of the Yough Trust Co., has offered to advance to any boy who plans to enter the contest for the Lynch prizes the money necessary for seed, for plowing the ground and other preliminary expenses. He urges upon the boys that they engage in this "work."



## Fuel Committee Meets in Washington

The new fuel board, the personnel of which is briefly sketched on the first reading pages of our paper this week, held its first meeting in Washington, Wednesday, May 9, at 2 o'clock. All the members of the committee were present, with the exception of E. J. Berwind and John Mitchell. Mr. Berwind was expected to be present later in the day. The committee at its initial meeting divided the United States into nine districts. Assignments of these districts were made.

E. J. Berwind, of New York, central Pennsylvania and the low volatile coals of West Virginia; W. W. Keefer, of Pittsburgh, western Pennsylvania, Ohio and Michigan; C. M. Moderwell, of Chicago, Indiana and western Kentucky; Erskine Ramsay, of Birmingham,

address pointed out the important responsibilities which are to devolve upon this fuel committee.

"War was once a question of feeding the soldiers," said the secretary, "now it is an industrial game, the foundation of which is coal. You are at the very foundation of the war, and unless there is a sufficient supply of coal the war cannot be carried on. It is a question of coöperation or compulsion; but instead of taking over the mines and the great industrial plants, we are asking you to serve on this fuel board. Your largest problem will be to get the greatest output of coal, and I know you will meet it with two fists in true American fashion, in the same way in which our soldiers will do when they meet the common enemy. We are in this thing



THE NEW FUEL BOARD, OR ADVISORY COAL COMMITTEE

Standing, left to right: James J. Storrow; Daniel B. Wentz; J. F. Welborn; S. D. Warriner; Erskine Ramsay; George W. Reed; C. M. Moderwell; H. N. Taylor; W. W. Keefer; E. L. Pierce. Sitting, left to right: Walter S. Gifford, director of the National Council of Defense; Francis S. Peabody, chairman of Fuel Board; Franklin K. Lane, Secretary of the Interior; George Otis Smith, director of the U. S. Geological Survey; Van H. Manning, director of the U. S. Bureau of Mines

Alabama, Tennessee and Georgia; James J. Storrow, of Boston, the New England states; H. N. Taylor, of Kansas City, Idaho, Kansas, Arkansas, Oklahoma and Missouri; S. D. Warriner, of Philadelphia, the anthracite field; J. F. Welborn, of Denver, Wyoming, New Mexico, Washington and Oregon; Daniel B. Wentz, of Philadelphia, Virginia, eastern Kentucky and the high volatile coals of West Virginia; E. L. Pierce, of Syracuse, was assigned to the coke industry. Van H. Manning, director of the Bureau of Mines, and Dr. Otis Smith, director of the U. S. Geological Survey, also members of the board, will coöperate by extending to the committee the free use of all the facilities in the two Government bureaus under their direction.

Honorable Franklin K. Lane, Secretary of the Interior, attended the first meeting of the board, and in a short

because we are determined to win. We want the business men to feel that the burden of the war rests upon those who represent the genius of our economic and industrial life."

Following the meeting, Francis S. Peabody, the chairman, stated that little would be made public concerning the deliberations of the board at that meeting, as plans and policies were discussed only tentatively. Meetings will be held daily until a sufficient policy is evolved to permit of the inauguration of the board's work. Members of the committee were guests of Chairman Peabody at dinner in the New Willard Hotel, Wednesday night. Matters regarding the supply of coal to the Government departments in Washington formed the subject of an informal conference between Chairman Peabody and Washington coal dealers yesterday.

# The Labor Situation

## General Labor Review

The trouble with the nation is that labor is distributed without regard to the amount of work to be done. In the anthracite region there is an acute shortage of labor, while in the bituminous regions there are too many men. This does not mean that the bituminous operators are not clamoring for more mine workers, because they are; and they allege, with justice, that their profits would be larger if they had these men.

But if the men in the bituminous region were all put to work every day, and all day, they would produce more coal than the country needs. The trouble is not that there are too few miners in the bituminous mines, but that there are too many mines and too few men to properly man all these mines. Fewer mines, with a quota of men and railroad cars, are what we want; and if we had them, there would be an abundance of men for all purposes, and the tonnage would be increased to normal needs. The operation of the mines would also be more economical.

### Hard-Coal Region Gets No Bituminous Miners

If the wage scale were more equal between the anthracite and bituminous regions, the difficulty might be corrected in a large degree by the transference of men from the bituminous to the anthracite field, for the shortage in labor is mainly among day workers, to whom the Gallagher law of apprenticeship does not apply. Of course, another difficulty is in the isolation of the anthracite region. The cost of getting there would eat into earnings for a long period of time even if wages were raised enough to make removal to that region otherwise attractive.

Reports from the Panther Creek Valley and from the territory as far north as Hazleton and as far south as Pottsville show that the munition factories are depleting the wage forces of all the regions near them. It is said that 2850 laborers of alien parentage have left Lansford and the vicinity since early in 1916. Of these, 90 per cent. went to Bethlehem, Eddystone and Redington, and 7 per cent. sailed for Europe. The other 3 per cent., we rejoice to say, became farmers. At least 500 men, mostly mine workers, have enlisted from the Schuylkill district since the war started, entering both the United States Army and the National Guard.

### Mine Loses Six Men in Ten to War Factories

As a result of the defection of 60 per cent. of its working force, Stanton colliery, in the Mahanoy Valley, has been abandoned, and the coal it produced will be hauled to Lawrence colliery, half a mile away. The Bethlehem Steel Co. has sent its agents into the coal fields and drawn men away by scores. As many as 100 men left for Bethlehem in one week. One labor agent has actually opened up headquarters at Weatherly, in Carbon County. The new wage scale, which gave the largest increase to day laborers, the class that received the lowest wage and was most disposed to migrate, may, the operators hope, lessen the movement toward the munition factories.

On May 1, the C. M. Dodson Coal Co., at Beaver Brook, gave the foremen, clerks and unorganized employees an 8 per cent. bonus on their wages from the first of the year.

### Will Pay More Only If They Receive More

Stripping contractors in the Lehigh field met on May 2 and decided that they would not grant the advance in the wage scale of the region to their 5000 employees unless the coal operators allowed them more for their work, which is given out on bids or on a percentage basis. In all probability a conference will be held shortly, and the operators will modify their contracts so that justice may be done to these men.

In the northern district the Delaware & Hudson Co. has another strike, this time at the Coal Brook colliery, where the laborers want the miners with whom and for whom they work to divide their earnings equally with them.

The northern district (No. 1) now has more funds than at any time before in its history. It has a balance of \$103,185.20, that balance having grown steadily from a few thousands since John Dempsey and John Mack became respectively president and secretary-treasurer of the district.

### Central Pennsylvanians Reject Liberal Scale

The miners of the central Pennsylvania district (No. 2) in session at Du Bois, Penn., have rejected by a vote of 2 to 1 the tentative agreement made by the mine workers and operators in Philadelphia. They insist on getting no less than a 33½-per cent. increase. Twelve mines employing an aggregate of 2000 men are now on strike. Apparently it is the Portage and Broad Top miners who are most opposed to the acceptance of any increase which is less than has been demanded. The mine workers' leaders have strongly urged acceptance of the agreement as written. It is most unfortunate that the central Pennsylvania mine workers are so willful. They should be content with the same increase as was granted in other regions.

The operators have conceded a 20-per cent. increase on the mining rate and the new Pittsburgh district day wage scale. The wage scale in the central Pennsylvania district for drivers was \$2.7778 per day. The Pittsburgh scale was \$2.98. The agreement puts the two on an equality at \$3.60, which is the new rate in the Pittsburgh district. Trappers were paid \$1.25 per day in central Pennsylvania. In the Pittsburgh region they were receiving \$1.31. Now in the Pittsburgh district \$1.90 will be paid, and the operators in central Pennsylvania agree to pay an equal amount. It is hard to see where central Pennsylvania will be after the war. It always sailed close to the wind. It can pay increases equal to those elsewhere, but it cannot readjust its wage scale in so wholesale a way without the prospect of future stagnation.

### Nonunion Miners Strike in Somerset County

In Somerset County, the Maple Ridge Coal Co. is gradually getting back its men and its tonnage; but the increased wages elsewhere are arousing a spirit of unrest. The Hilworth Coal Co.'s men struck for \$1 a ton for run-of-mine, pick-mined coal, but went back to work the next day without any concession. On Wednesday, May 2, the employees at the McDonaldton shaft of the Brothers Valley Coal Co. came out on strike for the same mining rate and recognition of the union. They were not so easily appeased.

The mines of John Wills, John Ream, W. A. Merrill & Sons and a few other small operators on the Berlin branch of the Baltimore & Ohio R.R. have gone out on strike, demanding a recognition of the union.

The operators in Somerset County on the Baltimore & Ohio R.R. have increased wages 15 per cent., making the rate effective May 1.

In the Cambria County field an increase of from 20 to 25 per cent. has been announced by the Cambria Steel Co., employing 1500 men, and by other firms employing in the aggregate an equal number. The increase is effective from May 1.

### Miners of Southwest Are as Radical as Ever

The Southwestern conference of operators and mine workers, comprising the concerns operating in Districts 14, 21 and 25, is unable to come to any conclusion. The operators in the Southwest are willing to conform to the New York settlement, but it is reported, telegraphically, on good authority that the mine workers want pay for deadwork. If this is true, Alexander Howat as usual is trying to get more for his men than is being conceded elsewhere. The essential thing at the present is to keep increases uniform in all sections, so that there will be no idle regions when the period of prosperity comes to an end. If there should be a disagreement, there will probably be a shutdown or Government interference. If the latter should happen, it is not likely that a differential against the Southwest region would be granted the miners.

In contradiction to the authoritative telegraphic advice regarding the demand for an increased deadwork price is the following letter of Apr. 25, signed by Alex Howat, president, District No. 14; Thomas Harvey, secretary of the same district; John Wilkinson, president, District 21; E. F. Ross, secretary of that district; D. A. Frampton, president, District 25, and George Hopple, secretary of that district. The letter is addressed to Ira Fleming, president of the Southwestern Interstate Coal Operators' Association:

In accordance with the understanding we had with you yesterday, relative to an increase in wages for the members of our organization, we herewith submit the following proposition for your consideration:



1. That pick and machine mining be advanced 10c. per ton in Missouri, Kansas, Arkansas and Oklahoma.

2. That all day labor now receiving \$2.98 and \$3 per day be advanced to \$3.60.

3. That monthly men and all other classes of labor employed in and around the mines be advanced 60c. per day, except as follows: Trappers shall receive \$1.90 per day and all boys now receiving \$1.57 per day or less shall be advanced to \$1.90 per day.

This advance to become effective May 1, 1917, and continue in effect until July 31, 1918.

#### Conference Strikes When Miners Quit Work

The conference was interrupted on Tuesday, May 8, by a strike in four mines in Crawford County, Kansas, belonging to the Western Coal and Mining Co. The miners quit work because the conference could not agree and the operators then declared that they would suspend the conference so long as the mine workers violated their agreement by suspending work. The mine workers' representatives agreed that the operators' stand was justified and Alex Howat, the district president, urged the men to return to work. They voted Wednesday afternoon, May 9, to resume their places in the mines. Consequently the conference reopened on Thursday, May 10. The prospect of an agreement seems brighter. S. A. Bramlett, the commissioner of District 21, is acting for W. L. A. Johnson, commissioner of the association, who is seriously ill.

The agreement in District 18, comprising western Canada, was voted on May 5 and the results will soon be known. The new rates grant increases over the rates in the old agreement of from 12½ to 20 per cent. on both day wages and contract prices. One hour is deducted per shift on all 10-hour and 12-hour men, and increases approximately proportionate are granted all miners taken to do company work and all miners working in abnormal places. It is agreed that the open shop is to be maintained with no discrimination against any mine worker by either operator or employee. The Chinese laborers are to be allowed to continue at work at schedule wages, though an exception is made for those employed at the Bankhead and Canmore mines.

### New Connellsville Wage Scale

On May 1 the H. C. Frick Coke Co. put in operation a new wage scale, the fourth advance since the end of January last year. In the 15 months intervening, the price of mining and loading room and rib coal has been raised 56c. per 100 bu., or 14c. per ton.

The aggregate increases are therefore about the same as in the central competitive district, as the H. C. Frick Coke Co. and the companies accepting the same wage scale are on a run-of-mine basis, as is the greater part of the central competitive district. On Apr. 1, 1916, the latter district gave an advance of 3c. per ton and on Apr. 16, 1917, an advance of 10c. per ton. The increase in the Connellsville region, therefore, is a little higher than in the central competitive district.

Pittsburgh day men were advanced 5 per cent. on Apr. 1, 1916. As a result drivers who formerly got \$2.84 received \$2.98 per day. These men were raised to \$3.60. This is an increase of 76c. per day. The H. C. Frick Coke Co. drivers, who were getting \$2.85 per day in January, 1916, are now getting \$3.85, an increase of \$1 per day.

On May 1 the notice was posted at every mine of the H. C. Frick Coke Co., and on May 2 every independent furnace operator and all the merchant operators had followed suit. The wage scale and the increases during the last 15 months and during the last 23 years are given in the table hereunder.

#### WAGES AND WAGE INCREASES IN THE CONNELLSVILLE REGION

Classes of Work	Rates			Increases	
	Feb. 10, 1894	Apr. 1, 1912	May 1, 1917	In 15 Months	In 23 Years
Mining and loading room and rib coal, 100 bu.	\$0.78	\$1.44	\$2.00	\$0.56	\$1.22
Mining and loading heading coal, 100 bu.	.88	1.58	2.20	.62	1.32
Mining and loading wet heading coal, 100 bu.	.95	1.70	2.38	.68	1.43
Drawing coke, per 100 bu. charged.	.43	.82	1.20	.38	.77
Leveling, per oven	.08	.13½	.18	.04½	.10
Drivers, rope riders (shafts and slopes)	1.65	2.85	3.85	1.00	2.20
Drivers, rope riders (drifts) full run.	1.60	2.80	3.80	1.00	2.20
Cagers, per full run.	1.65	2.85	3.85	1.00	2.20
Tracklayers, blasters and timbermen, (shafts and slopes)	1.65	2.85	3.85	1.00	2.20
Tracklayers, blasters and timbermen, (drifts), per day.	1.60	2.80	3.80	1.00	2.20
Assistant tracklayers, blasters, timbermen, per day.	1.35	2.15	3.20	1.05	1.85
Inside laborers, per day.	1.35	2.15	3.00	.85	1.65
Dampers and tippelmen, per full run.	1.35	2.15	3.00	.85	1.65
Chargers, per day.	1.40	2.15	3.00	.85	1.60
Forking cars, 40,000 lb.	.75	1.75	2.50	.75	1.75
Forking cars, 50,000 to 60,000 lb.	.85	1.85	2.60	.75	1.75
Forking cars, over 60,000 lb.	.95	2.00	2.75	.75	1.80

### Wage Changes in West Virginia

West Virginia is not viewing the war as an opportunity to lengthen the hours of labor. It is on the contrary decreasing them. That state will soon be on an 8-hour basis, the same as the union mining states. Though the war means more to the West Virginia operators than perhaps any other area except that around Pittsburgh, the mine owners, who have been working only irregularly, realize they can secure all the coal they need with the 8-hour day. It is to be hoped that the mine workers who gain the shorter day will speed up the working hours so that when the demand is severe there will be no loss of tonnage.

On May 3 E. W. Lawson, the secretary of the Central West Virginia Coal Operators' Association, stated that as a result of a meeting of the organization held at Fairmont an order would be issued granting the 8-hour day to all miners in the Clarksburg-Fairmont region. A substantial increase accompanies the shorter day. Practically every mine worker in Harrison and Marion Counties will be affected by the new order. Only recently the mine workers in that region had a 10-hour day.

It appears that the union miners in the Flemington district, comprising Taylor and Preston Counties in northeastern West Virginia, struck on May 1 for an 8-hour day and a short ton. Their year-long contract had expired. A conference was called May 5 which was attended by the operators, the representatives of the mine workers, some of the officials appointed by the Federal Department of Labor and Samuel Montgomery, the state labor commissioner. The operators conceded the 8-hour day, the short ton and a wage advance of approximately 14 per cent. Two thousand men were affected.

The Davis Coal and Coke Co., which mines coal along the Western Maryland R.R. in West Virginia and Maryland, has announced an increase of 10 per cent. for all its mine workers. The company has also reduced its working hours to eight. This is the third advance received by these non-union mine workers in a single year.

The Kanawha wage scale has been extended to the Four States Coal Co. This company had a contract still good for one year, but it surrendered this, granting the mine workers the 8-hour day, the 6½c. increase on the mining rate and an advance of 15 per cent. on the wage scale.

The Thacker-Williamson field in Mingo County, West Virginia, has granted a 10 per cent. increase to date from May 1. This is the third wage increase granted within four months. In the Guyan and Pocahontas fields two advances have been given by the operators and a third is under consideration.

### COMING MEETINGS

**Kentucky Mining Institute** will hold its spring meeting May 18 and 19 at Lexington, Ky. Secretary, J. W. Read, Lexington, Ky.

**Illinois Mining Institute** will hold its next meeting on May 17, 18 and 19, at La Salle, Ill. Secretary, Martin Bolt, Springfield, Ill.

**International Railway Fuel Association** will hold its annual meeting May 14-17 at the Hotel Sherman, Chicago, Ill. Secretary, J. G. Crawford, Chicago, Ill.

**Canadian Retail Coal Association** will hold its annual meeting at Toronto, Ont., Canada, June 14 and 15. Secretary, B. A. Caspell, Brantford, Ont., Canada.

**Mine Inspectors' Institute of the United States of America** will hold its tenth annual meeting July 10-13 at Indianapolis, Ind. Secretary, J. W. Paul, Bureau of Mines, Pittsburgh, Penn.

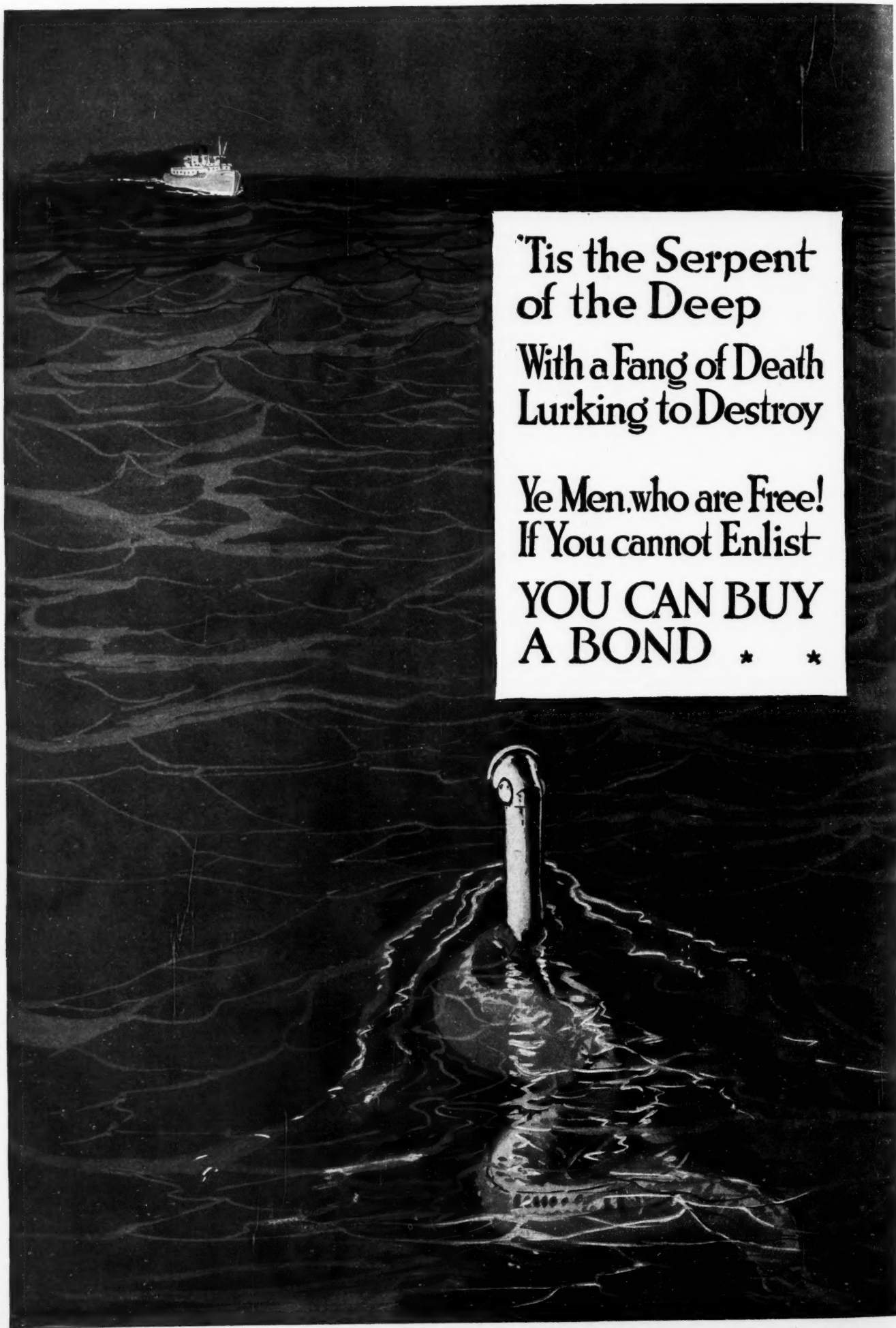
**American Institute of Chemical Engineers** will hold its semiannual meeting June 20-22 at Buffalo, N. Y. Secretary, J. C. Olsen, Cooper Union, New York City.

**American Society of Civil Engineers** will hold its annual convention in the "Twin Cities," St. Paul and Minneapolis, Minn., June 12-15. Secretary, C. W. Hunt, 220 W. 57th St., New York City.

**Retail Coal Dealers' Association of Texas** will hold its annual convention May 14-16 at Fort Worth, Tex. Secretary, E. T. Coleman, Plainview, Tex.

**Illinois and Wisconsin Retail Coal Dealers' Association** will hold its annual convention at Danville, Ill., June 12-14. Secretary, I. L. Runyan, Chicago, Ill.

**Rocky Mountain Coal Mining Institute** will hold its next meeting June 18-20 at Glenwood Springs, Colo. Secretary, F. W. Whiteside, Denver, Colo.



'Tis the Serpent  
of the Deep

With a Fang of Death  
Lurking to Destroy

Ye Men, who are Free!  
If You cannot Enlist

YOU CAN BUY  
A BOND \* \*



## Editorials

*The nation needs two thousand million—two billion—dollars for the immediate conduct of the war. Have you figured that this means \$20 for every man, woman and child in this country? How can we secure it if we do not all do our part? Every operator should make it easy for every employee to help his nation—and himself—by contributing to the Liberty loan. This is the time for every man who has not saved before to turn over a new leaf and add strength to the nation's arm by purchasing the securities offered by the government. Many industrial concerns have already agreed to purchase bonds for their employees, to be delivered to them at once and paid for on the partial-payment plan.*

### Speed Up!

"The work of the world waits on him. If he slackens or fails, armies and statesmen are helpless."

By the "him" of the foregoing quotation is meant the coal miner, and the quotation itself is taken from President Wilson's message to American industry.

The mine workers of this country are in the glorious position of being able to act as pacemakers in the process of speeding up the industries of America. Unless every single man in the coal-mining industry of the United States merges his individualism—his own selfish interests or beliefs or prejudices—in the larger and more ideal interests of the country itself, in nationalism, and sets to in earnest to redouble the most strenuous efforts he has ever made before, the supply of coal will fall short of the demands that are going to be made of it.

Without a plentiful supply of coal the factories will be unable to do their part in the coming awakening of industrial America. Without plenty of coal our warships can do nothing to protect our coasts or guarantee to American shipping that it may safely send foodstuffs to the starving nations of Europe, and supplies to our soldiers and those of our allies, who are offering their lives that the world may be made a world of everlasting peace.

The new slogan of the country now is "Speed up!" We dare not be satisfied when we make only two blades of grass grow where one grew before. We must turn all the power of our muscles, all the cunning of our brain, to an effort that will result in larger output and at a saving in time.

Every day that a mine is shut down, every day that a mine is idle because of a strike, every day the mine forces are depleted because of a holiday—means that some vital part of our national endeavor is deprived of its essential food—the fuel that burns under industries' furnaces.

Let the coal-mining industry set the example. Let it line up right behind the President and show that in its lexicon there are no such words as "slacken" and "fail."

### Clear the Decks for Action

Our country being definitely committed to a part in the European War, thoughtful men are turning to a careful consideration of our economic conditions. The financial resources of this country aggregate a stupendous total that it is almost impossible to comprehend. No country ever engaged in a war with such an enormous accumulation of wealth as we have.

But in spite of all these brilliant conditions and prospects, we must not deceive ourselves as regards the stern realities of the issue we are now facing. And we must not be prodigal or extravagant in our expenditures. We must also keep before us the fact that the world will look largely to us for its means of rehabilitation after the war. With Europe not only devastated, but financially prostrated as well, the drain upon us at that time will be enormous, possibly even exceeding anything that may occur during the war.

Our resources are being thrown into the balance at a time when the entire world is approaching economic exhaustion. These resources are prodigious and will be a potent influence in reaching a decision, though we must not delude ourselves with the belief that they will, by any means, be decisive.

The most prominent and outstanding fact in the whole situation is the paucity of food supplies. Millions of men have been withdrawn from productive operations for closely approaching three years, representing a loss in food and materials that it would be impossible to compute. The wear and tear of war operations have not, during this interval, reduced the consumptive requirement. In fact, it has increased substantially.

Farms have gone untilled, and the inevitable result is that the world is facing a possible starvation. True, the women have entered largely into industrial life in the manufacture of munitions and other materials, but they have taken only a small part in farm operations. Weather conditions too have been unfavorable to the production of bountiful crops, and we are now viewing with amazement the placing of an embargo by the Argentine Republic, one of the greatest grain-exporting countries in the world, against the shipment of wheat or flour to foreign states.

This country is now on the verge of calling approximately a million men to the colors, which will automatically withdraw several million more who will be engaged in equipping and maintaining the first million. This call comes at a time when the labor market can ill afford to meet it, and it is withdrawing the very best men we have. If there were plentiful crops assured us, we might face this situation with more complacency; but already the reports of the winter's wheat crop are most discouraging.

Our statesmen are busily engaged in organizing the country's resources to raise billions of money, and the possibility of a shortage in our supply of food and raw materials is being overlooked. Let us hope that imme-

diated steps will be taken to remedy this. We have such enormous latent possibilities that properly organized, they will ultimately turn the tide of the war in our favor and force an early decision. Let us all individually and collectively see that this organization is effected.

✱

## Mine Workers and Transportation

The International leaders and the representatives of the Central Competitive District of the United Mine Workers, who assembled on Apr. 14 in New York City to make a contract with the operators, passed several resolutions relative to the conduct of the war. One of these required that all supplies for war service, including transportation, shall be furnished the Government at a reasonable profit.

The declaration is probably not any more subject to criticism than those made by many bodies of selfish capitalists, who have persuaded themselves that public utilities, like transportation, should be kept under the strictest kind of restraint.

In the Middle Ages the public realized as now that the greatest necessity of humanity was labor, and it believed that happiness could only be secured if labor was cheap. If the working man sought a larger wage, he must be compelled by law to moderate his demands and accept the least wage that would keep soul and body together.

Food also, legislators realized, was essential; and they passed laws to keep the price down to the lowest possible figure. They did not perceive when they lowered the wage of the workman that well-paid labor was more productive than underfed labor; and when they kept down the price of wheat they did not reason that the man who could not make money farming would quit the farm for work which was less needed, perhaps for an industry which could only be regarded as productive by a stretch of imagination.

Today we do little better. When we are extremely anxious to have certain services performed in larger measure than ever, we argue that because we want them so much we should have these tasks done for us at cost. We are willing to let the people who do us no service—who do us possibly a disservice—make a wholly unregulated and unreasonable profit. But those who we would like to see increase in numbers, who we desire to have work overtime, who we wish to see enlarge the scope of their activities and the quantity of their equipment, we hold down to a reasonable profit, which usually is not a profit at all but at best only the cost of production.

To come closer to the point, we are clamoring for more efficient transportation, but who will buy railroad stocks and bonds at this time when there is no prospect of profit? We are raising freight rates, it is true, but not enough to meet wage increases. Wages go up 20 per cent., and perhaps the Interstate Commerce Commission will generously let the railroads have 15 per cent. higher rates—and this after most of the roads have floundered around in debt for years.

He who buys securities of some of the more fortunate railroads will do the country a greater service than he who buys Government bonds, and he stands to be less adequately rewarded. If these securities are not bought, there will be no money for equipment, rails or grading, and the roads will be unable to handle the coal, the food, the soldiers and the munitions we need. The Inter-

state Commerce Commission needs to guess again and make the guess nearer 30 than 15 per cent. One may well question if even 30 per cent. is enough to make railroading so interesting to the investing public that it will divert the stream of capital from the mines to the railroads.

The talk of physical valuation for railroads may be all right if the profits allowed on that valuation are high enough to compensate for the undoubted risks, but why does no one talk of physical appraisals of the metal stocks? Are their valuations and profits being placed on any such basis? Stocks issued at \$5 are quite numerous quoted at \$50. It is true some of the earnings of these corporations have been put back into the business, and a physical valuation, even with the ore deposit rated at the purchase value, might show that the investment now exceeds \$5 in value. But the original \$5 bills are earning, even though they are not paying, \$15 and even more a year. So look at the matter as you will, the metal stocks are favored far above the railroad securities.

The effect of the high prices has been to stimulate the metal industry in generous measure, so that it has even met the almost insatiable needs of our Allies. As a result prices now tend to decline. The evidence of what profits will do for the railroad industry is afforded by the recent history of the metal mines. Give the railroads, especially those having excessively low freightage rates, more generous schedules and the blood will course more freely along these veins of the nation and put increased life into all its members. In saying this there is no suggestion that the freight on anthracite coal should be increased.

There is no reason why the railroads should be doomed to eat comb and the metal mines honey. They tell us, and tell us truly, that mining is risky and that fortunes have been lost; that the man who finds a deposit is like the man who makes an invention, he deserves a liberal reward. But the early history of railroads shows also a terribly discouraging financial record. Nearly all the railroads fall by the way while building up their volume of traffic, and it seems that capital needs at least as much inducement to put its money into railroads as to put it into metal mines, and that just as much intelligence is involved in their location and conduct.

On the whole, though it is hard to make the stampered public believe it, the railroads have been as well administered as most businesses. The directors have been on the whole as careful of the public interest. Figures could well be quoted to show it. The coal and other capitalists who are baiting the railroads for their "scandalous methods" might well be invited to take railroad stocks and bonds, and partake themselves of the alleged unrighteous profits of the railroad industry. Just now, at least, we may be sure they would not accept the invitation, even on the basis of a physical valuation.

The needs of the country demand that an increase in freight rates, larger by far than planned, be granted at once and that all the many full-crew laws be utterly abolished. Not only that, but the public should be asked to fill a patriotic duty and buy "rails," for there is nothing of which we are so short today as transportation.

But it is well nigh useless to talk patriotism as a sufficient argument. If the country needs the money in transportation, let it pay dividends to transportation companies, and the money will flow in automatically. If the lid is to be screwed down tight on business during the war, let the railroads feel its pressure as little as any.



## Department of Human Interest

### Mine Workers To Meet Food Scarcity

The two notices accompanying this article have been issued by the Winding Gulf Colliery Co. operating at Winding Gulf, Raleigh County, West Virginia. George Wolfe, the general manager, requested the department of agriculture at Charleston to send a man to prepare for the gardening campaign, and Mr. Sayre, of Mason County, was sent to advise the company. Seeds obtained from the representative of the congressional district of which Winding Gulf forms a part were distributed to about 200 school children.

The coal company distributed free of charge 8 bu. of onion sets, large quantities of tomato plants, cabbage plants and sweet-potato plants, and a quantity of beans, corn and peas. Potatoes were sold at cost. All land was furnished without charge and fenced free. All the lime needed was donated to the mine farmers; manure was supplied them for 50c. a load. The ground was ploughed for \$1 a lot.

The winter wheat crop is barely sufficient for the needs of this country alone. We have not had such a poor crop for 13 years. What the summer crop will be cannot be

even guessed till July. Consequently, we must be ready to eat what food is available and must be prepared to supply this food ourselves, each from his own plot of land, if he is fortunate enough to possess one.

Miners have fallen into the bad habit of depending on canned goods. They buy large quantities of tomatoes, paying a trifle for the fruit and a great deal for the can and its transportation. It would be far better for them to get the fresh food from the garden and save the whole cost.

In England the people are feeling the lack of starchy foods. Potatoes are not to be obtained except by those who have gardens of their own. There are people in comfortable circumstances who have not seen a potato for months. None of us wants to do without "parathies," to which we are all devoted—especially when we can not get them. The only way to be assured of a supply is to grow them ourselves. There may be many surprises before the war is over, and only those who have been provident enough to supply themselves with a garden full of vegetables will be well fortified against adverse fortune.

Plant a flag in your garden as an incentive to remind you that he who works in the garden serves his flag.

## PLANT SOMETHING AND WIN A PRIZE!

The Winding Gulf Colliery Company Offers the Following List of Prizes to Their Employees Living at Winding Gulf:

WHITE EMPLOYEES	
For the best all around garden	\$25
For the second best . . . .	\$15
For the third best . . . .	\$10
For the best 1-2 bu. Potatoes	\$5
For the second best . . . .	\$3
For the third best . . . .	\$2
Largest and best display of Vegetables grown by one person . . . .	\$10
Largest Pumpkin . . . .	\$5
All around best kept Grounds	\$10
FOR THE LADIES AND CHILDREN:	
Finest Display of Flowers .	\$10
Second best . . . .	\$5
Third best . . . .	\$3

COLORED EMPLOYEES	
For the best all around garden	\$25
For the second best . . . .	\$15
For the third best . . . .	\$10
For the best 1-2 bu. Potatoes	\$5
For the second best . . . .	\$3
For the third best . . . .	\$2
Largest and best display of vegetables grown by one person . . . .	\$10
Largest Pumpkin . . . .	\$5
All around best kept grounds	\$10
FOR THE LADIES AND CHILDREN:	
Finest Display of Flowers .	\$10
Second best . . . .	\$5
Third best . . . .	\$3

The awarding of prizes will be by three disinterested people, not employees, and not living here, and will be under the direction of the State Commissioner of Agriculture. No one Employee will receive more than one prize.

**He Who Helps Himself Helps His Country!**  
**WINDING GULF COLLIERY COMPANY**

## WANTED!

### VOLUNTEERS FOR HOME SERVICE

Perform a Pleasant Patriotic Duty!

## PLANT SOMETHING!

Gain Pleasure and Profit from your Back Yards and Vacant Lots that grow nothing now but weeds. This will help you to solve the Food Problem, the Seriousness of Which We Are Trying To Impress Upon You.

With the call for millions of Men for the Army and Navy, the regular farmers can not grow as large crops as formerly. It is Up To EACH ONE OF US To Help Supply This Shortage. Are YOU willing "to do your bit."

It is not too much to say that to obtain food it may be ABSOLUTELY NECESSARY TO RAISE IT! It will not be so much the question of having money to buy, but it will be the question of securing at ANY PRICE!

The Winding Gulf Colliery Company are willing to do their part. We will furnish the land and fence it. We will furnish the manure, delivered, at 50c per load. Necessary lime free of charge. Plow your lot for one dollar. Potatoes at Cost!

Leave your requirements at the office and you will be furnished

### FREE OF CHARGE:

Tomato Plants, Cabbage Plants  
Sweet Potato Plants, Onion Sets,  
Beans of all kind, Peas, Sweet Corn

**It is as patriotic to raise food as to  
fight in the trenches**

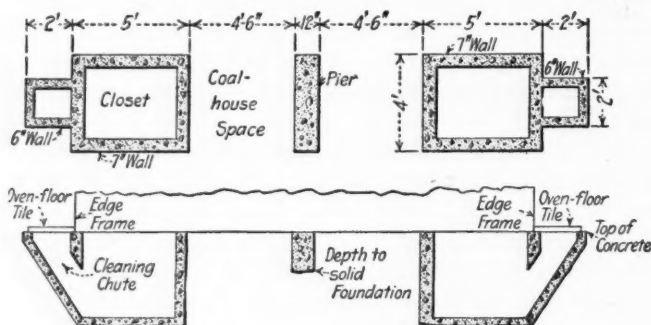
SHOULD WE HAVE TO DISPENSE WITH BREAD THE WINDING GULF MINERS WILL HAVE GENEROUS  
GARDENS TO FALL BACK ON

## Closet Vaults for Mine Villages

Sanitary conditions in mine villages are receiving so much attention and study that the following description of ash-concrete closet-vault construction will doubtless be of interest to *Coal Age* readers:

The building surmounting these vaults is typical of the ordinary frame type of construction employed for double houses or dwellings. It is divided into two coal compartments and two water closets, as shown in the sketch.

The primary object is to make it unnecessary to move or tilt the building to clean the vault. To make this



CLOSET VAULT WITH CLEANING CHUTE AT REAR

possible an opening, described in the sketch as a cleaning chute, extends from the top to the bottom of the vault.

The opening to the chute extends 2 ft. past the end of the building and is covered with two oven-floor tile cemented in place. When necessary these tiles are easily removed and replaced.

The depth of the vault depends on the nature of the strata, but from 5 to 6 ft. will suffice. When solid material is not reached at that depth a 6-in. concrete bottom is laid. The construction is not costly, as the forms can be built so as to be used many times. The concrete is made from boiler or coke ashes, proportioned as follows: 4 sacks cement, 3 tray barrows of sand and 8 barrows of ashes. Other points in favor of this vault are that it need not be cleaned oftener than every 5 or 6 years and that it gives off much less odor than older types of closet pits.

## Vocalists in the Anthracite Region

The mine workers in the anthracite region have a number of vocalists of more than ordinary talent. Nearly every town has its own singing society. Every meeting is incomplete without one or more solo selections.

New York City realized what the miners of the hard-coal region were doing when at the Hippodrome last Palm Sunday an orchestra of 150 musicians, assisted by a chorus of 300 voices, under the auspices of the Scranton Oratorio Society delivered the impressive Berlioz "Requiem" as a memorial to the fallen soldiers of the warring nations.

The Scranton Oratorio Society, which has won many first-prizes in competition with the foremost singing societies throughout the United States, is largely recruited from the homes of the mine workers, though there are in it many business and professional men. The anthracite region is quite musically inclined, and the disposition to study the best classical music instead of mere ragtime differentiates it from other parts of the country.

## Some Mine Workers in the Hospital

The *Anode*, the safety organ of the Anaconda Copper Mining Co., says in effect:

Two miners started to repair the trolley boxing alongside a live wire. They did not take the trouble to throw off the power at the switch before starting work, and there really was no need for the power to be kept on the line as the motor was not running. Thus they jeopardized their lives altogether unnecessarily in correcting an unsafe condition.

A carman, while pushing a car caught his finger between the post and the side of the car. Place your hands on the top of the car while pushing it, and not at the side.

A laborer, opening the hopper bottom of a railroad car loaded with coal, climbed on top of the coal to poke it through. The pile gave way and the man fell through the bottom of the car into the bin, the coal falling in on top of him.

The companies which are most successful in reducing fatalities are those which are publishing in full the details of the accidents in their mines. The full light of publicity is the only way to reduce accidents. As they have to be compensated for in any event, it is to the interest of the mine worker to know exactly how they occur. It is a time of plain talking. Let us pluck up courage and tell the facts as to every accident that happens.

## His Day Off

There are too many "days off" in the bituminous regions, and the misfortune is that so many of them are being spent as depicted in the cartoon. Thus the idle day absorbs an undue amount of the profit of the working day and often leaves the miner in an unfit condition for the next day's work.

The miner and his family, in the long run, judge his company not by what he makes but by what he saves. He may be satisfied to make and spend while making and spending run on schedule. But when an evil day comes he denounces the village in which he has not been "able to save." Thus the saloon gives the village a bad name which it may not at all deserve.

There are many mines which run only 25 to 30 per cent. of the time, where the short time worked makes it hard for the miners to make both ends meet, even with the greatest of thrift. The majority of them are not



IDLE DAYS ARE FOR THE GARDEN, NOT THE SALOON  
spending their days off in a saloon and thereby adding to their troubles, but there are some who are; and the industry can never be conducted with the minimum of discontent till the saloon's evil influences are eradicated.



## Discussion by Readers

### The Carbide Lamp in Blackdamp

*Letter No. 1*—Kindly allow me to give to the readers of *Coal Age* a little of my own experience with a carbide lamp. I remember the time when I was acting as an assistant foreman it happened one day that the mine foreman was off duty and he put in his place an old assistant by the name of Pat.

I recall the morning well. The firebosses had reported everything clear; but, as Pat was making his round, he came to a heading off the third left entry that was filled with some kind of nonexplosive gas. The heading and rooms were full and old Pat became excited and, sending for me, ordered the place fenced off. After a little investigation we concluded the gas was blackdamp.

We could not keep a light in our lamps, which were the Wolf type of safety lamp. They would not stay lit ten seconds close to the bottom, and an oil lamp gave the same results. There were two timbermen working close at hand with carbide lamps and I thought it was a good chance to find out if the carbide lamp would reveal danger to health in a nongaseous mine. So borrowing one of their lamps, I took it into the heading and set it on the bottom in the same place where we had just tried the other lamps.

After remaining in the mixture 15 or 20 min., I felt myself going and retreated at once to fresh air, leaving the carbide lamp where we had placed it. It remained there 45 min. longer, and when taken out was as bright as ever. I am forced to conclude, therefore, through my own experience, that this is not a safe lamp for mine use, as one might walk a long distance in a heading filled with blackdamp, or work in the mixture too long a time. Seeing his lamp burning brightly he would have no warning of danger till it would be too late.

I have often observed that where a dozen men are working with carbide lamps they will take about 8 min. out of every hour tampering with their lamps, trying to get them to burn properly. In an 8-hour shift this would mean a loss of more than an hour each day for these men. It often happens that when this lamp is given to a green man he hardly gets anything done, because he spends his time tinkering with the lamp. I have heard men say, "Well, they paid me today to learn how to burn a carbide lamp."

### Water Gage in Fan Ventilation

*Letter No. 2*—Referring to the inquiry of Samuel Dean, *Coal Age*, Apr. 21, p. 722, in which he states that there was no rise in the reading of the water gage when the main airway was bratticed off, the fan running at a constant speed, I agree with the suggestion made in the reply to this inquiry, that "some hidden cause" must have produced such a result.

In 1910, I was in charge of "Eureka," No. 37 mine, as foreman for the Berwind-White Coal Mining Co., Windber, Penn. We had installed a large double-inlet

Sirocco fan, operated as a blower on top of a 140-ft. air shaft. We decided to make a test of the fan in respect to its pressure and efficiency. For this purpose I took men and material into the main intake airway and started to erect a brattice in the airway at a point near the foot of the shaft. The fan was run at a constant speed of 200 r.p.m.

When we had closed about one-third of the airway with the brattice, I found that the water-gage reading had increased. Before the brattice was erected, the reading was 3 in., but I do not recall the exact amount this was increased.

When the brattice had closed about two-thirds of the airway, I again observed the water gage and found that it showed a further increase.

Finally, when the brattice was finished, and the airway completely closed to the passage of air, the water-gage reading had risen to 7 in., showing an increase of fully 4 in. above the original reading. The effect was so great that breathing became more difficult.

Another somewhat similar experience occurred at Mine No. 35 of the same company. This mine was ventilated by a Sirocco fan operated as a blower on top of a shaft 330 ft. in depth. The test of this fan was made during severe cold weather in February, 1914.

This test, however, was of a different nature, being practical and caused by an accumulation of ice at the foot of the downcast shaft. The assistant foremen making their usual rounds in the mine observed a considerable reduction in the air volume and reported this to me at once. I immediately called up the fan engineer, who stated that the water gage had increased 3 in. during the night.

An investigation showed, as I have stated, that ice had been and was still falling in the shaft so that the air passage at its foot was about two-thirds closed. This explained fully the reason for the increase in water gage and decrease in air volume.

J. O. SEESE.

Clymer, Penn.

### Arrangement of Room Tracks

*Letter No. 3*—Referring to the suggestion of hauling coal from two, three or more rooms over a single switch laid on the entry, by arranging the tracks so that the coal from adjoining rooms is hauled through a crosscut near the face and taken out on a single track, permit me to say that a little thought will convince most men that such an arrangement is not practicable nor will it prove to be economical. Its advantages are few and not lasting.

In the first place, the light 16- or 20-lb. rails generally used in rooms will hardly stand up under the increased wear and tear incident to hauling the coal from several rooms over a single track. Either the heavier steel used on the heading would have to be used in the rooms or the lighter iron would be found of little further use when taken up and would have to be thrown aside, which would

mean a big item of cost. Indeed, it is a question if the switches and rails made of light iron would outlast the life of a room, under these conditions.

Again, it has been urged that the scheme would save tracking and switches, which could be taken up in the rooms where they are not needed and laid near the face. In this connection, it must be remembered that such advantage would only be temporary, as the track and switches would have to be relaid when the pillars in these rooms are withdrawn.

If the coal from three rooms is to be handled over a single switch, it would be found necessary to lay seven switches in all, before the rooms are worked out and abandoned, as compared with the laying of three switches in the usual manner. Also, if the track is taken up and relaid when the pillars are drawn, this would mean another item of expense. On the other hand, if these switches are not taken up for use nearer the face, it would be necessary to keep on hand a number of extra switches for use in the crosscuts.

#### SUGGESTS A POSSIBLE IMPROVEMENT

Allow me to suggest that, were it not for deranging the ventilation and the need of providing for the removal of pillars, a better scheme would be to align all crosscuts at a distance of, say 180 ft. from the entry, and transfer the entry track to this point so that the coal from all the rooms could be hauled through the first room on the entry, in which a good substantial track should be laid. In that case, the pillar separating No. 1 room from the main haulage road could be cut through at that point and the coal hauled out at once onto the main road. Such a scheme, however, would not provide for the removal of the pillar coal and would probably cause some difficulty in respect to the ventilation of the mine.

Another consideration is the expense of maintaining a good road for haulage in a room where the roof conditions might prove troublesome. If the mine is gaseous, canvas doors will hardly prove adequate and safe, and will generally need to be replaced by wooden doors at a considerable additional cost. Also, before starting the work of drawing back the pillars, in the abandoned sections of rooms, it will generally be necessary to do much work in cleaning up falls, as the timbering in these sections will have been neglected.

The argument that time is saved when the gathering motor or mule is not required to make a separate trip from the entry to the face of each room sounds better than is realized in actual practice. While it is true that in hauling coal from three rooms by the old method, the motor or mule must travel 720 ft. more track to reach the crosscuts 180 ft. from the entry and return, than in hauling the same coal over a single track, the saving in time is comparatively small. There is no saving in switching and greater risk of delay by derailment of cars on the sharp curves. Again, the saving in the wear and tear on the cable is overestimated, as will be seen when it is remembered that the cable must be dragged around the sharp corners in the crosscuts. W. H. NOONE.

Thomas, W. Va.

*Letter No. 4*—The question of the arrangement of tracks in rooms, with a view of expediting the work of hauling the coal from the face to the entry, is one that has interested me greatly.

In my opinion, there is a decided advantage in laying the tracks through the crosscuts leading to adjoining rooms as the working faces advance. Not only does this scheme save time, because the motor makes but a single trip instead of three to haul the coal from as many rooms, but there is also a considerable saving in rails and ties where the scheme is adopted under conditions favorable to its use.

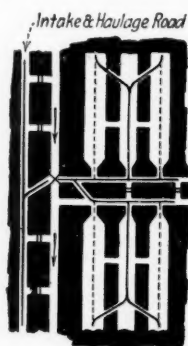
This plan was successfully carried out in a mine where I worked a short time ago. In that case, however, there was a particular advantage because there were no pillars to be taken out and it was not necessary to relay any switches or tracks. The scheme adopted was to drive three rooms together, or so that the faces were equally advanced as far as the second crosscuts.

These crosscuts were started from the center room of the three and driven on an angle of 45 deg. inclined toward the face. There was thus provided an easy line of track for hauling the coal from the rooms on either side out over the track left in the center room. When the crosscuts were completed, the switches at the mouths of the two side rooms were taken up and laid at the crosscuts in the center room. As the three faces were advanced, the track in each of the side rooms outby from these crosscuts was lifted and used as required at the face. In this manner the rooms were driven up and the switches moved forward two crosscuts at a time, the second crosscuts being always driven on an angle of 45 deg. inclined toward the face.

It is important to notice that the switches at the mouths of the three rooms off the first entry, shown in the accompanying figure, are right-hand switches, while the corresponding switches off the second entry are all left-hand switches. It is observed, however, that there is required one left-hand and one right-hand switch, at the crosscuts in the center room, on each of these entries. Hence, it will be necessary to exchange one right-hand switch on the first entry for a left-hand switch taken from the second entry, when laying the switches at the crosscuts in the center rooms. In this arrangement, it should be noticed that there are only required enough switches, rails and ties to extend the rooms to the second crosscut, as all unused switches and tracking are taken up and laid again in advancing another section. Objection has been raised to the bending of rails, it being claimed that they are hard to straighten and of little use when once bent. I want to say that, while it is not an easy task, any good tracklayer can straighten a bent rail without injuring it.

In regard to cars being easily derailed at the crosscuts, it is my experience that this only occurs on very sharp curves and when the track is not properly laid and kept in good condition. While I would avoid curves in a track, as far as possible, I believe it is better to have a few curves in the road when it will obviate a long haul, especially where the cars are not too large or the grades severe.

In closing, let me say that the time taken in tearing up the switches and relaying them is but a small item in comparison with the advantage gained in gathering the cars. A good tracklayer and a helper can take up and





relay both of these switches in an 8-hour shift, at a cost not to exceed \$7. This amount would be saved in a short time by the more rapid gathering of the cars. I hope others will be heard from in regard to their experience in shortening room haul when gathering cars. Herrin, Ill.

OSTEL BULLOCK.

## Preventing Mine Accidents

*Letter No. 2*—It occurs to me, in reading the numerous accounts of accidents given in *Coal Age*, under the title "Mine-Accident Record," that more attention should be given to suggesting how these accidents may be avoided. I was sorry to see so large a number of fatal accidents reported from Illinois, in letter No. 16, *Coal Age*, Mar. 31, p. 573. Allow me to suggest the following, as means that should be taken to prevent accidents.

1. An assistant foreman visits a place, which he finds to be dangerous, and orders the man working there to prop the roof at once. One such instance was reported where the man refused to timber his place, claiming that he should be paid for such work. The Illinois Mining Law makes it the duty of all miners to timber their places securely for their own safety, using the material supplied by the company for that purpose.

### THE MEN RESPONSIBLE FOR ACCIDENTS

The refusal of a man to obey the instructions of the assistant foreman should have been met promptly by his discharge. He should not have been permitted to continue his work. The failure of the assistant to enforce his orders or withdraw the man from the place makes him responsible for the accident that followed.

2. Speaking of the requirement of the mining law that a torch or other marker must be hung on the rear car of every trip hauled in the mine, the statement was made that "it was some trouble for the motorman to carry this torch back and hang it on the last car of each trip, and the men frequently took chances," and the torch was not hung in its place as the law requires.

In this regard, let me say that if a motorman looks after his motor and keeps it in good working condition, so that there will be no delay in hauling the coal from the inside parting to the shaft bottom, he has all that he should be asked to do, and enough to keep him busy. A triprider or someone else should be held responsible for hanging the torch or marker on the end of the trip, and failure to do this should make that one responsible for any accident that might result.

3. The mine foreman or one of his assistants or firebosses is responsible for the safe removal of gases that have accumulated in the working places of a mine. No attempt should be made to remove any considerable quantity of gas from a place while men are working in that section of the mine. Any accident that may occur in the removal of the gas, either from a defective safety lamp in the hands of the fireboss, as was the case in one instance that was reported, or by employing improper means for driving out the gas, would make the man in charge of the work directly responsible; but a degree of responsibility will also rest on the mine foreman in charge of the mine, whose duty it is to supervise the work.

4. The assistant foreman who found "a bad piece of top in a room where the roof was working" and ordered the men to leave the place while he proceeded to hunt

timbermen to secure the roof and make it safe, was responsible for the accident that happened when the men returned to their work in his absence. Before leaving the place, he should have barred the entrance by placing the customary danger signal warning everyone to keep out.

5. The shotfirer, who, "after lighting a shot in one room went directly into the next room to light another," was guilty of a practical violation of the meaning of the Illinois Mining Law, which states that "Not more than one shot shall be lighted at the same time in any working place, unless the firing is done by electricity or by fuses of such length that the intervals between the explosions of the two shots shall be not less than 1 min." The proximity of the two shots, where the first one lighted blew through and caught the shotfirer as he was in the act of lighting the second, was such as to bring this case within the meaning of the law. The shotfirer suffered for his own neglect to heed and obey the law. His papers should have been revoked as a result of this accident.

6. As long as men are permitted to travel on haulage roads, such accidents as that caused by a man stepping back on the track after a trip had passed him, and being caught by one or more cars that had broken loose from the trip, will continue to happen. The mine foreman in charge is responsible for such an accident, because of his failure to provide a second traveling way so that men would not be compelled to use the main haulage roads in going to and from their work.

Practically all of these accidents mentioned in Letter No. 16 could have been avoided by a strict compliance with the mining law and a proper mine discipline.

Springfield, Ill.

JAMES M. RODY.

## Need of Drawing Timber

*Letter No. 1*—Kindly allow me to refer to the reply to the inquiry on this subject, which appeared in *Coal Age*, Mar. 17, p. 490, and express my opinion. Having acted as mine manager for a period of about 12 years, in the northern part of Illinois, and having had charge of mines worked by the longwall advancing method, I can say that my practice has always been to leave certain timbers standing in the goaves, provided such timbers are not too strong.

Experience has shown that the props so left in the packs were a great help in controlling the roof pressure, as they acted like buffer springs to cause a gradual and quiet settlement of the roof on the packs. I have found this to be the case especially where the floor was fireclay. The effect was to prevent anything like a squeeze or creep occurring that would destroy the packwalls and close the roads.

The only exception to the rule of leaving timbers standing in the waste was in respect to props that had been set too close to the roadside, say within 18 in. or 2 ft. of the roadway. These props were always taken out, for the reason that as the road heaved they would be broken, and the elbow or bend of the timber protruded into the road. This caused the packwalls to bulge and was a source of much annoyance unless such timbers were removed.

The practice of taking out all the timbers from the waste, in longwall work, in my opinion, would invite a

squeeze or creep that would destroy the roadpacks. When no timbers are left in the gob, we lose control of the roof pressure, as all miners do not build their packs alike, and they do not present the same resistance to the subsidence of the roof. Some miners delay too long before building their packs and, at times, leave a pack half-built over a night or week end. Others are not careful to pack the slate close to the roof.

For these reasons, I have found that it is better to leave timbers that are not too strong standing in the packs and depend on them to produce a more general and quiet settlement of the roof on the packs. There are many old mine managers in northern Illinois that have been handling the longwall advancing method for the last 40 or more years. They are scattered through La Salle, Bureau, Marshall and other counties, and I hope that we shall hear from some of them on this matter.

Sparta, Ill.

EDWARD JONES.

[The reply given to the inquiry and referred to by this correspondent advocates the removal of all timbers from the goaves in longwall work. This does not, of course, include those cribs that are built for the protection of roads and gateways. It assumes that packwalls are built at uniformly regular distances apart and in a substantial manner, which is important in order to properly control the roof settlement.

Any timber left standing in the waste, unless broken, is certain to produce an uneven settlement. If many of these timbers are left standing, the effect is to throw an undue weight forward onto the coal face, making the mining more difficult and, at times, causing the roof to break off near the face, which would be a bad feature in longwall work. We hope to hear from others on this question, as we believe the experience of this correspondent is somewhat exceptional.—Editor.]

## The "McGinty" in Coal Mining

*Letter No. 1*—Kindly permit me to draw attention to a seeming misunderstanding of terms in the reply to the inquiry, *Coal Age*, Mar. 17, p. 490, regarding the use of a "McGinty" for handling cars in rooms driven on the pitch. The answer given to this inquiry evidently describes a "barney," instead of what is known in the West as the "Red Lodge McGinty." Although these devices are apparently of the same nationality, the principle upon which they work is somewhat different.

The McGinty is a device that has been in service a number of years at Red Lodge, Mont., and other places throughout the West, where the coal pitches at an angle too steep for handling cars from the faces of rooms to the gangway, by ordinary means. It consists of a strong wooden or steel frame, holding either one or two sheaves set tandem, whose motion is controlled by a handbrake of any convenient form.

On the other hand, the barney is a counterbalance that serves to retard the descent of the loaded car on an incline and, in turn, draws up the empty, as described in the reply to the inquiry.

The McGinty is securely anchored to a post firmly set close to the face of the pitch. The rooms are usually driven double so as to arrange for two tracks, to allow the loaded car to descend while the empty is ascending the pitch. A  $\frac{1}{2}$ - or  $\frac{3}{4}$ -in. rope is generally used to connect the cars, and to avoid frequent splicing of the rope a

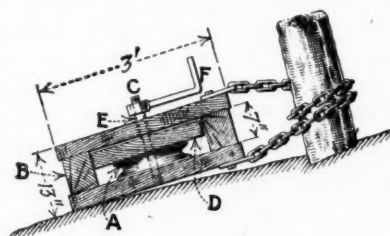
length of 50 yd. is first used, the excess length being coiled and hung by a hook on the up-hill end of one of the cars. The rope makes one full turn around the sheave or passes over the two sheaves about which it is reeved in figure 8 style. From the McGinty, the rope passes to the right and left and over a sheave at the head of each road, and is then attached to the cars operating on the two tracks.

The McGinty is advanced up the pitch about every 25 or 50 ft., but the two sheaves at the head of the tracks are kept as close to the face as possible, to permit of more convenient loading of the cars. It is a number of years since I have had occasion to use a McGinty, and I find that my drawings have either been lost or mislaid, but I shall be glad to make a few sketches or give further information to anyone who may so desire.

Hiawatha, Utah.

R. M. MCGRAW.

[We are glad to have Mr. McGraw draw attention to the inadvertence and misapplication of the term "McGinty," in our reply to the inquiry to which he has referred. This device was fully explained in *Coal Age*, Vol. 8, p. 982, and we reproduce here the cut used at that



"MCGINTY BLOCK" FOR SELF-ACTING INCLINES IN ROOMS

time, which shows a single sheave A, 15 in. in diameter and 4 in. wide, having a groove 3 in. deep in its face. This sheave is supported in a strong wooden frame made of 3 x 12-in. plank. The sheave is held in place by a

$1\frac{1}{2}$ -in. iron pin C, 18 in. long, which is prevented from turning by a  $\frac{1}{2}$ -in. bolt that passes through the sole-piece and a  $\frac{1}{2}$ -in. hole in the pin, as indicated in the figure.

The motion of the sheave is controlled by the brake block D, which is actuated by the collar E, surrounding the pin. This collar is pressed down on the brake block by means of the handle F, which turns on a screw thread cut on the end of the pin C. As shown in the figure, the McGinty is made secure to the foot of a post set firmly in the floor, to which it is attached by a strong chain passing twice around the post.—Editor.]

## Practices in Blasting Coal

*Letter No. 3*—I have been much interested in reading the many different letters relating to the blasting of coal, but that of George A. Brown, of Superior, Wyo., *Coal Age*, Apr. 7, p. 638, agrees so well with my own experience that I want to indorse everything he has said.

While some may be inclined to doubt, as W. L. Morgan suggests in his letter on the "Capitol Mine Explosion," page 569 of the preceding issue, most practical men who are familiar with the work the shotfirer must perform will judge of their statements from a practical point of view gained from their own experience.

Just here I am led to offer a comment on Mr. Morgan's remark where he says, "How often have we seen a shotfirer out within two hours after he began to shoot, already washed and on his way home after having fired between 300 and 400 shots." I do not want to doubt Mr. Morgan's veracity, but let us look at this statement a



moment and see what it would mean from a practical standpoint.

We will assume that two men are to fire, say 400 shots, and that these shots are to be distributed equally among 200 working places. For the sake of argument and to expedite the work of the shotfirers, we will suppose that these places are all located continuously, with breakthroughs at the head of the rooms and entries, so that the shotfirers will not be required to do any extra walking, but all of their time can be devoted to the actual work of firing the shots. We will also imagine that they meet with no obstacles in their path that will delay them in performing the work.

#### A MATHEMATICAL CALCULATION

Let us now assume that these men fire the shots in a single place each minute, which would be doing fair work—better than can be performed under the usual conditions that confront shotfirers. The firing of 400 shots, in 200 places, at the rate of shooting a place each minute, would require 200 min., or 3 hours 20 min. for the actual work. To this must be added at least 20 min. to allow for the time required to walk out of the mine, wash and start for home.

Under the assumed conditions, which must be admitted to be far better than are ever realized in the work of shotfiring, these men have consumed 3 hours and 40 min. They had no long entries or deep rooms to travel, encountered no roof falls or wet holes to delay them, and no time has been allowed for erecting brattices or examining shots to make sure that they are safe for firing. Again, every practical miner knows that 400 shots or 200 working places must cover a large area in the mine, and, for this reason, the statement to which I have referred would seem to be slightly overdrawn.

Springfield, Ill.

SHOTFIRER.

### Mine Safety Inspector

*Letter No. 3*—Referring to the letters that have appeared in *Coal Age*, advocating the employment of a safety-mine inspector, with the view of reducing the number of accidents occurring underground, permit me to say that if the mining laws of Pennsylvania are enforced by mine officials, there will be no need of a safety inspector.

It would seem that there are enough mine officials whose duty it is to look after the safety of the men employed underground, and little will be gained by employing another man for this purpose. First, there is the mine foreman who has full charge underground and whose duty it is to visit the working places and attend to the removal of all dangers. Then comes the assistant foreman, whose duties are the same as those of the foreman and who shares his responsibilities, taking his place when he is absent from the mine, and in most mines there are several of these assistant foremen.

In addition to the foreman and his assistants, there is the fireboss, whose duty it is to examine the mine and pronounce it safe for work, before allowing the men to enter in the morning. It is the duty of the fireboss to report promptly any dangers that he may find in the workings. He must bar the entrance of all places in which he finds danger to exist, and put up a suitable danger sign warning all men to keep out.

If it were not that some of the mine officials, fearing to lose a part of the day's output of coal, failed to enforce mining rules and regulations designed to make the mine safe, many accidents would be avoided. In my opinion what is needed is a more strict observance of these rules of safety, rather than the appointment of a so-called safety mine inspector. Would not this man be helpless to act in his capacity as safety inspector when other mine officials are willing to overlook violations of safety rules, for the sake of increasing the daily output of the mine? Is not the hope of securing greater safety by this means a false hope—an illusion? Is it not far better to face the issue squarely and recognize the handicap under which a safety inspector would perform his duties?

There is one phase of the question that should be considered, before it is decided to increase the number of men to look after the safety of the mine, by the appointment of a safety-mine inspector. The miner must already give up some of his time to answer the questions asked by the mine foreman, the assistant foreman and the fireboss, who makes his second round of the mine during the hours the men are at work.

Now, if the miner must give up more of his time to talk with the safety inspector, also, he will experience a considerable setback in getting out his coal for the day. It is easy to see that the efficiency of the miner would be much impaired by these numerous visits of officials to his working place, although it must be acknowledged that it is in the interest of safety.

#### THE SITUATION VIEWED PRACTICALLY

The question to be decided is, Will it pay the operator of a large mine, putting out from 600 to 700 two-ton cars of coal a day, to employ a special man as a "safety-mine inspector," whose duty it would be to look after the very things that the assistant foremen and firebosses are supposed to oversee, and for which they should be held responsible? It would be a physical impossibility for such an inspector to make the rounds of a large mine in the working hours of a single day and do the miners any good by word of caution or instruction.

To my mind, a better method to employ, in the interest of safety, is to divide the mine into districts of such size that an assistant foreman in charge of a single district will be able to make a careful examination of everything in his district, visiting each place at least three times a day. It is true that it is not the number of visits that counts so much as the ability of an inspector to foresee an accident that might occur, and take measures to prevent its occurrence.

The bituminous mine law of Pennsylvania requires that each working place in the mine shall be examined by the mine foreman or his assistant at least once each day when the men are at work. But I think it is always better to do more than what the law requires, and would have each place visited two or three times a day whenever the conditions require.

In closing, let me say that the assistant foreman is the logical safety inspector and the foreman is his chief, but all mine officials who properly perform their duties become inspectors, and it is my belief that no more than these are needed for the safe operation of the mines. In this, I do not include the state mine inspectors, whose visits to the mines are made quite independently.

—, Penn.

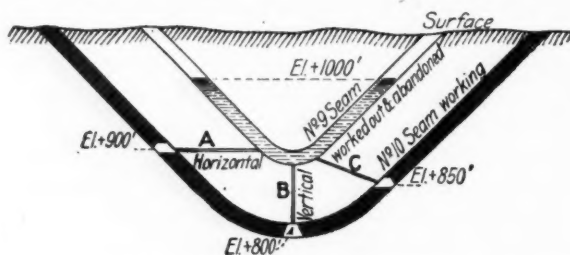
LUMEN.

## Inquiries of General Interest

### Draining an Overlying Seam

Kindly permit me to present a proposition in regard to draining the water that has accumulated in an abandoned overlying seam. It is proposed to tap this water by means of boreholes, starting from the lower seam and extending till they penetrate the overlying seam containing the water.

The general condition is illustrated in the accompanying sketch, which shows the relative elevations of the water accumulated in the upper seam and the points of discharge or mouths of three proposed boreholes.



IDEAL CROSS-SECTION OF A SYNCLINAL BASIN

The boreholes are each 5 in. in diameter and are marked A, B and C in the figure. The respective lengths of these holes are: A, 110 ft.; B, 80 ft. and C, 90 ft.

The question I want to ask is how to calculate the volume or quantity of water that will flow through each of these proposed boreholes when first tapped, assuming the elevation of the surface of the water in the old workings at that time as, say 1000 ft., and the elevations at the three points of discharge as follows: A, 900 ft.; B, 800 ft.; C, 850 ft.

MINE ENGINEER.

Hazleton, Penn.

The total head, in each of these cases, is found by subtracting the respective elevation at the point of discharge, from the elevation of the surface of the water, which gives for the head in each case, the following: (A),  $h = 1000 - 900 = 100$  ft.; (B),  $h = 1000 - 800 = 200$  ft.; (C),  $h = 1000 - 850 = 150$  ft.

This actual or gravity head, in each case, is equal to the sum of three heads; namely, entrance head, due to the resistance offered to the entrance of the water at the mouth of the pipe; friction head, due to the frictional resistance of the flow of water through the pipe; velocity head, or that portion of the total head absorbed in producing the velocity of the flowing water.

These three heads are expressed by the following formulas:

$$\text{Entrance head, } h_o = 0.0013 \frac{G^2}{d^4}$$

$$\text{Velocity head, } h_v = 0.0026 \frac{G^2}{d^4}$$

$$\text{Friction head, } h_f = \frac{lG^2}{800d^5}$$

The actual or gravity head ( $h$ ) is equal to the sum of these three heads and is expressed by the formula

$$h = \frac{1}{800} (3.12d + l) \frac{G^2}{d^5}$$

The flow of water ( $G$ ), expressed in gallons per minute, taking the diameter of pipe ( $d$ ), as expressed in inches, and the length ( $l$ ), as expressed in feet, is then given by the formula

$$G = 20d^2 \sqrt{\frac{2dh}{3.12d + l}}$$

Substituting the given values for  $d$ ,  $h$  and  $l$ , in the last formula, the flow of water in each of the three cases mentioned is found as follows:

$$(A) \quad G = 20 \times 5^2 \sqrt{\frac{2 \times 5 \times 100}{3.12 \times 5 + 110}} = 1410 \text{ gal. per min.}$$

$$(B) \quad G = 20 \times 5^2 \sqrt{\frac{2 \times 5 \times 200}{3.12 \times 5 + 80}} = 2287 \text{ gal. per min.}$$

$$(C) \quad G = 20 \times 5^2 \sqrt{\frac{2 \times 5 \times 150}{3.12 \times 5 + 90}} = 1885 \text{ gal. per min.}$$

✱

### Sharpening Coal Augers

It appears to me that it would be of interest to a large number of readers if some one of practical experience in that line would furnish information regarding the best method of sharpening a coal auger, so that the least pressure would be required to enable it to cut the coal, and illustrate his remarks by a sketch.

The miner who uses an auger knows better than anyone else that few blacksmiths are able to sharpen the bit so as to make it cut readily. As this is an important matter in securing a good daily output of coal, let us hear from those whose experience will be helpful to us all.

Fairbanks, Penn.

BLACKSMITH.

A question of this sort is of much practical interest and we hope it will call forth a ready response from men of experience. The answer should include the proper method of dressing a dulled bit and afterward tempering the same to give it a suitable hardness that will render the cutting edge more durable.

Attention should also be given the enlargement of the cutting edge necessary to enable it to cut its own clearance in the hole. A rough sketch showing the proper position in which the drill should be held, when sharpening, will also be helpful. Let this question be discussed by those who know by experience what is needed.

The correspondent is right when he says that the proper sharpening of a miner's drill is an important matter in securing a good daily output of coal. A bit that does not cut its own clearance in the hole, or one that is tempered too soft for the coal and is quickly dulled, is a source of annoyance and delay, which greatly detracts from the miner's efficiency.



## Examination Questions

### Alberta Examination for First-Class Certificates—1914-1915

(Answered by Request)

*Ques.*—What are the various uses of concrete in mining? State the proportional ingredients for a good concrete mixture? What is the strength of good concrete?

*Ans.*—Concrete is extensively used, today, in lining shafts, building dams and retaining walls, sidewalls and arches in airways and constructing stables, pumprooms, engine houses, tool shanties, sumps, etc., in mines.

A good concrete is formed by thoroughly mixing a good hydraulic cement, sharp clean sand and broken stone passing a  $1\frac{1}{2}$ -in. mesh, in the proportion of one volume of cement, two volumes of sand and from four to six volumes of broken stone.

The ultimate compressive strength of good concrete will vary with the proportions of the several ingredients, their quality and manner of mixing. With a good portland cement, sharp clean sand and broken granite, the ultimate strength may vary from 1800 to 3000 lb. per sq. in., the higher values representing a smaller proportion of sand and broken stone and a larger proportion of cement.

The tensile strength of concrete is not worthy of serious consideration in the design of reinforced-concrete structures. It is quite variable and is generally estimated, if considered at all, as one-tenth of the compressive strength.

*Ques.*—If naphtha is used in the safety lamps at a mine, describe what precautions you would take to prevent accidents in the lamp cabins.

*Ans.*—A thoroughly reliable and competent man should be in charge of the lamphouse, and only careful men should be employed to clean, fill, inspect and assemble the lamps. No one should be permitted to enter the lamphouse but those persons whose duties call them and who are the authorized attendants. No matches or means of producing fire other than the appliances used in the lamps should be permitted in the building.

The lamphouse should stand in an isolated place separated from other buildings and stores of material. The general supply of naphtha should be stored in a large underground tank outside of the building, and only such amount of the fluid should be pumped into the filling tank as will suffice to fill the lamps used in a single shift. All accumulations of waste or dirt of any kind should be carefully avoided. Only specially prepared cotton must be used in the lamps, and this should be replaced regularly with fresh cotton when it becomes the least greasy.

*Ques.*—In what time can an engine of 40 effective hp. pump 4000 cu.ft. of water from a shaft 360 ft. deep?

*Ans.*—Making no allowance for loss by leakage or friction, the time required to pump this water from the given depth is  $4000 \times 62.5 \times 360 \div 40 \times 33,000 = 68$  minutes, or 1 hour 8 minutes.

*Ques.*—You wish to make an examination of the dust deposit in an underground airway for the purpose of determining whether it is dangerous or not. How should the dust samples be taken and to what tests should they be submitted?

*Ans.*—Attention has been drawn by Mine Inspectors W. N. and J. D. Atkinson, of England, to the fact that there is a difference between what they term the "upper dust" deposited on the timbers and sides and roof of airways, and the "bottom dust" deposited on the floor. The upper dust has been shown to be finer and generally more inflammable than bottom dust and to contain more oxygen which it has absorbed from the air and has doubtless become more or less impregnated with the oily and sooty products resulting from the burning of miners' lamps or torches. Furthermore, the action of the atmosphere has had a disintegrating influence on the upper dust, which is more affected thereby than the bottom dust. The latter is also largely mixed with incombustible shale dust, which renders it less inflammable and explosive ("Mine Gases and Explosions," page 173).

For these reasons, and because the upper dust, from its exposed position, is more liable to be blown into the air and increase its explosive condition, samples for testing should be taken from the timbers, roof and sides of the airway. This dust should be carefully collected in bottles and kept stoppered to prevent further contact with the air. The dust should then be submitted to careful tests in the laboratory to determine the percentage of fixed carbon and volatile products it contains, as well as its inflammability and explosiveness when freely suspended in air.

*Ques.*—An analysis of the mine air taken in the return airway shows 2 per cent. methane. The velocity of the air current is 1500 ft. per min. What regulations would you adopt with regard to this airway?

*Ans.*—This is a high velocity of air current for the percentage of methane it contains. Even assuming there is no particular amount of dust carried in the air, there is danger in a strong current charged with this percentage of gas where a safety lamp is exposed to the direct force of the current. The gauze of the lamp will heat more rapidly and may pass flame and ignite the gas should this percentage happen to be increased for the moment. Gas travels largely in veins and is often unequally distributed in the airway. Where the test shows 2 per cent. in one place, there is liable to be a higher percentage of gas at another point in the passage.

Under these conditions, strict regulation should be enforced to prevent anyone from entering the return airway, except the fireboss whose duty it is to examine and ascertain the condition of the return current. If possible to do so, the return current should be divided so as to reduce its velocity. Increasing the quantity of air in circulation by doubling this velocity, if that were possible, would reduce the percentage of gas one-half, but such a high velocity of the current would be objectionable.

# Coal and Coke News

## Washington, D. C.

Representative William S. Howard, of Georgia, has introduced in the House a resolution reciting the increased cost of coal to the railroads and industrial plants of the country, and directing that an investigation be made by the Federal Trade Commission to disclose whether unfair and exorbitant prices have been exacted by the coal producers.

The Trade Commission is directed, by the resolution, to report to Congress by Nov. 1, 1917, whether additional legislation is needed to correct the evils which may be disclosed to exist in connection with price conditions. It is also directed to report "whether conditions found to exist in coal operations justify Congress in authorizing and directing the President of the United States to take over such coal mines as shall be found engaged in exacting unfair and exorbitant prices from such railroads, industrial establishments and the consuming public for use during the period of the existing war." The sum of \$500,000 would be appropriated for the investigation.

Statistics on comparative tonnage and costs of coal to the railroads and industrial plants at the present time as compared to a year ago and the cost of materials entering into the manufacture of farm implements would be gathered for the information of Congress. If the Trade Commission finds there are "existing agreements or evidence of tacit understandings as to prices on the part of coal operators and others," it would furnish the evidence to the Department of Justice with its recommendation as to what penalty should be exacted in each case.

The resolution also directs the Trade Commission to inquire as to whether the prices now charged for engines, cars and other equipment and supplies needed by the railroads and industrial establishments generally bear a reasonable relation to the cost of production.

### Small Amount of Anthracite Brought Premium

Not to exceed 5 per cent. of the anthracite coal marketed last winter was sold at panic prices, operators, jobbers and retailers agreed when they were accorded a hearing last week before the Federal Trade Commission. It was the comparatively few spectacular sales that were noised abroad, it was declared, that has caused so much trouble. The public was said to have lost sight of the fact that 95 per cent. of the coal marketed during the panic period brought only the ordinary rate of profit to all who handled it. That the Federal Trade Commission does not conform entirely to this view is indicated by the report which has been issued since the hearing.

Newspapers were blamed by many who spoke at the hearing for having contributed chiefly to the panic. Arthur F. Rice, who represented the retail coal dealers of New York City at the hearing, said that only 2 per cent. of the coal sold in New York City brought \$12 for the retailer. Despite the fact that this information was available readily to newspapers, their articles mentioned little else than \$12 coal, while predictions of \$16 and \$20 coal were made freely. Gov. Fort, a member of the Commission, inclined toward the belief that the retailers themselves had done something to increase the panic. He read an extract from a letter written to a woman by a retail coal dealer in which the coal situation was set forth in a manner certain to create alarm.

A maximum price of coal during the existing emergency was urged by W. A. Clark, president of the New England Coal Dealers' Association. Mr. Clark stated that he represents the majority of the New England coal dealers, whom he believes share his view. Unless the price is fixed by the Federal government, he predicted that some of the public utilities companies in New England would be forced to suspend during the coming winter.

Preferential movement of coal by the railroads is by no means a panacea for existing shortages, W. H. Williams, of the Delaware & Hudson Co., believes. The blockade is only accentuated by this preferential treatment, he said. The refusal of cargo carriers on the Great Lakes to take coal on their return for consignments of iron ore was held by Mr. Williams to be having a potent influence on the car situation. Millions of tons of coal ordinarily moved by the Lake boats, he said, are being forced onto the railroads.

Any fixing of prices met with opposition from the operators. It was held by those who spoke on this subject that the operators can be trusted to be fair and that any venture into the matter of price fixing would have to extend to all com-

modities if injustice were not done. Gov. Fort said he is inclined to agree with this view. Mr. Rice pointed out that any fixing of a maximum price, if attempted, should be made on the basis of the dealers having the highest cost. He declared that over 200 retail coal merchants in New York City have been put out of business in recent years by the various difficulties which have crowded upon them. Since only 60 retailers remain to serve the entire city Mr. Rice urged that the highest cost be taken as a basis if the government should decide upon a maximum price.

That a distinct need for the jobber exists in the coal trade was brought out clearly at the hearing, although that class of middleman described as having "his office under his hatband," is just as necessary to the trade as is "a deck-hand on a submerged submarine."

The complexity of the whole situation was manifested by the way one problem would tie into another during the discussion. It was difficult for the Trade Commissioners to keep the discussion from ramifying too extensively. One vital detail was shown to be the scarcity of mine timber. Much of this material is brought up Chesapeake Bay by tugs. So many of these tugs have been diverted to naval service as to have caused serious embarrassment to operators.

### HARRISBURG, PENN.

Judge J. A. McIlvaine, of the Washington County court, on May 5, sustained the workmen's compensation board in its method of determining the average wage of an injured employee in continuous employment.

The decision, which established a precedent for the settlement of cases involving about \$100,000 now before the referees or the board itself, was given in an appeal of the Pittsburgh Coal Co., from the award of \$15.78 to John Adams, an employee injured in January, 1916, in a mine accident.

Under the rules established by the compensation board the weekly wage on which the compensation for Adams was based was determined by a series of computations in which only the days Adams worked during a period of six months were divided into the total earnings for the period.

The company contended that the deduction of days on which the employee could not work because the mine was closed or for other reasons over which he had no control was an arbitrary procedure. It was contended that the average daily pay should have been determined by dividing all working days into the total pay, only Sundays and holidays being counted out in the final computation.

Adams was awarded 50 per cent. of his wages for two weeks as compensation for the accident, by the referee of the district in which he was injured. By computing under the rules for ascertaining wages as worked out by the compensation board, the referee awarded Adams \$15.78. The Pittsburgh Coal Co. appealed this decision to the compensation board on Feb. 7, 1917. Harry M. Mackey, chairman of the board, handed down a decision in which he sustained the referee and explained the origin of the rule for computing the average wage.

The coal company then appealed the case in the hope of breaking the system of wage computation established by the compensation board. It was said that the decision of Judge McIlvaine, which sustains Chairman Mackey, in every respect will be carried to the supreme court.

The dispute over the method of computation of wages centers around the provision that from the total days in the six months' period involved in the computation, the number of days missed by the employee through no fault of his own, shall be deducted.

To determine on what basis Adams should be paid his compensation, the rules of the board provide that the average weekly wage for the six months preceding the accident shall be taken.

In his case the six months' period extended from July 12, 1915, to Jan. 12, 1916. In this period there were 184 days. Adams in that time earned \$350. But the referee found that Adams had actually worked only 121½ days. He arrived at this figure by deducting 26 Sundays, 12 Saturday half-holidays, 6 days for legal holidays and 16½ days when Adams was ready to work but was unable to do so through no fault of his own.

After deducting the 62½ days in which Adams did not work, the referee and the board after him found that the man earned a daily wage of \$2.87. On the basis of a week of 5½ days, as provided by the rules, Adams earned \$15.78 a week during the six months' period. He was entitled to 50 per cent. of this for two weeks or to the award of \$15.78.

When the workmen's compensation board adopted this method of computation it chose a middle course between two suggestions. One was that the total earnings during a six months' period should be divided by all the working days. The other was that all days on which the man did not work, regardless of the cause of his idleness, should be deducted. The ruling of the board was a middle course between these proposals.

### Doings at the State House

If a bill considered during the past week by the Manufacturers' Committee of the House is written into law, Pennsylvania will be the first state in the Union to adopt universal health insurance along the same lines that are in force in most of the countries of Europe. The legislation is one step in advance of workmen's compensation.

The provisions of the bill as outlined by William Draper Lewis, former dean of the University of Pennsylvania law school, who addressed the committee with a number of other speakers, will insure every wage earner in the state and the dependents of all workers earning less than \$100 a month against illness to the extent of two-thirds of that wage. The amount of the fund is determined by taking 4 per cent. of the wage of the employee as a maximum. The employee then pays ⅔ of this maximum, the employer ⅓ and the remaining ⅓ is borne by the state. The ratios are the result of careful observations as to the degree of interest of the three parties.

J. Byron Deacon, speaking for the Associated Charities of Pittsburgh, said that 30 per cent. of the disability of workers was caused by illness, in which he was borne out by Miss Elizabeth Kirbride, of Philadelphia. It is estimated that within a radius of 10 miles of Pittsburgh, \$10,000,000 is lost every year through the illness of steel and coal workers and the contributions of charity for relief are only \$3,000,000.

Regardless of whether the manufacturers' committee reports the bill to the House, its advocates will press for the passage of another bill now in Appropriations Committee, establishing a commission to investigate health insurance and to report to the next Legislature.

Senator Crow has introduced a bill providing for the establishment of a commission to study the problems resulting from the industrial pollution of rivers, lakes and streams to ascertain and experiment with means for modifying, abating and doing away with pollution and to recommend legislation to regulate and control the pollution nuisance.

A number of complaints have been made to the state authorities against the coal operators in the anthracite and bituminous region in allowing mine water and culm to run into the streams. Complaints have also been registered against many manufacturing concerns for allowing acid water to reach streams.

The commission is to have power to summon witnesses, employ chemists and others whose services may be necessary.

A sister bill has been introduced in the House. Backed vigorously by the governor, as well as by others, the Woodward bill, placing a 2 per cent. ad valorem tax upon anthracite and bituminous coal, has been placed upon the House calendar. It was favorably reported out of the Ways and Means Committee, together with other revenue-raising measures.

It was expected that a bill dedicating 50 per cent. of the tax to the municipality in which the coal is mined or washed would supplement the Woodward bill, and until this is done the revenue-raising bills will have hard sailing. Chairman Woodward is in favor of introducing a bill to dedicate for the purpose of surface support 50 per cent. of the proposed tax, on coal.

The Ramsey bill, which puts the responsibility for surface support upon the state, will solve the problem if a sufficient fund is created by which the bill can be made operative, and if the Ramsey bill is passed, the legislature will have to pass the means by which it can be operated, and for that reason, Chairman Woodward, of the Ways and Means Committee, proposes that the bill shall return some of the money to the coal counties.

More coal companies are being incorporated in the State of Pennsylvania just now than ever before in its history. The activity is due to the tremendous demand for coal and to the prices obtained. The rush to incorporate is much like that of a few years ago to charter moving-picture theaters and for iron and steel companies several months after the outbreak of the European war.

Practically all of the new coal companies are for mining of bituminous coal, few anthracite companies having been chartered. Since the first of the year there have been close to 70



coal companies incorporated and the last three weeks they have been chartered at the rate of 10 and 12 a week. The past week 10 were granted letters patent. Another interesting fact is that the capital of the companies when chartered is given at \$25,000 to \$50,000, instead of \$5000 to \$10,000 as is usually the case.

Labor leaders from every part of the state are planning to come here soon to arrange some sort of a program on the compensation amendments. Opposition to the amendments has been growing stronger because of the heavy expense and the war-outlook and the administration has decided to remain neutral in the matter. Labor leaders will make a drive in the House to see how far they can go.

#### PENNSYLVANIA

##### Anthracite

**Dunmore**—The Pennsylvania Coal Co. has adopted the policy put into effect some time ago by the Delaware, Lackawanna & Western Railroad Co., of treating cases of mine-cave damage individually, and making repairs where the surface owners are unable to defray the costs of putting their homes back into shape after mine caves. The repairs are being made regardless of the fact that the company claims the legal right under its deeds and waivers to surface land owners to mine all the coal without liability for damage.

**Hazleton**—Local coal dealers who haul from the breakers of the G. B. Markle Co., have been notified of an increase in the price of pea coal from \$2.75 to \$5 and chestnut and stove from \$4.40 to \$5.10. This is an increase of \$2.25 in the cost of pea and 70c. on the other sizes.

**Wilkes-Barre**—Nearly 200 anthracite mine workers, mostly foreign-speaking men, appeared before the Miners' Examining Board Nos. 1 and 2, on May 2, to qualify for certificates as practical miners, but less than 50 were able to answer the questions satisfactorily. The trouble with the applicants was their lack of knowledge of the English language.

Nearly 1000 members of Wilkes-Barre District Mining Institute, representing collieries employing more than 20,000 miners in the vicinity of Wilkes-Barre, on May 3 indorsed a message to the President of the United States, seeking national prohibition of the manufacture and sale of intoxicating liquors as a means to a maximum production of coal to meet the demands of the war. The words, "that the use of foodstuffs for the manufacture of intoxicants be prohibited," were in the message sent to Washington.

**Pittston**—There will probably be no lack of potatoes next winter in the cellars of the mine foremen of the Pennsylvania Coal Co., despite the present scarcity of the tubers and the high prices prevailing. Six of the foremen have pooled their farming interests and have secured permission from the coal company by which they are employed to farm a tract of 5 acres of good ground near the colliery.

**Pottsville**—President W. J. Richards of the Philadelphia & Reading Coal and Iron Co. has announced that it is the expectation of that firm to make the customary summer discounts on anthracite coal, the same as in previous years. No effort is being spared to insure the largest possible production from the mines, and it is the opinion that sufficient coal can be produced to care for the normal needs of all users.

##### Bituminous

**Conemaugh**—Walter Holl, New York coal operator, has purchased the holdings of the Suppes Coal Co., the deal having been closed on May 3. The purchase price is said to be in the neighborhood of \$150,000. Mr. Holl represents local interests, it is stated. The tract is one of the richest in this region and includes a modern mine. It has been in operation for years.

**Indiana**—It has been stated here that a large corporation has purchased several tracts of coal near West Lebanon, Indiana County, and will operate by the stripping process. This area carries the Pittsburgh and Sewickley beds and the cover is shallow in the greater portion of the field. It will be necessary to build 5 miles of railroad to reach the new property.

**Big Run**—Brown & Furniss have completed their sidings and other outside construction and are now shipping coal over the B. R. & P. Ry. A second drift is being opened and this coal will also be dumped over the present tippie. George Furniss is superintendent of the new operation.

**Somerset**—Mine Inspector Fletcher W. Cunningham, of this city, has advanced a new system for mining the coal of Somerset County, especially the "C" prime seam. This coal bed has a limestone bottom underlying the coal and Mr. Cunningham wants this taken up instead of taking down the roof to provide sufficient height in the headings. The limestone could be used in agriculture and also in the making of roads. He has succeeded in persuading one company to try out the scheme and it reports that the financial results and revenue from this source have been gratifying.

**Blairsville**—Coal land in the vicinity of Black Lick, Indiana County, took a jump in price last

week, when drillers at work on the Wherle farm reported that three workable beds of coal underlaid the land. One of the beds is 36 in. and two of them about 44 in. in thickness.

**Uniontown**—The superintendents of the coke region of the H. C. Frick Coke Co. met at Uniontown recently to study safety conditions and how to aid the government in the best possible way during the war. The chief address was given by Superintendent C. B. Franks.

It has been announced from the local offices of the H. C. Frick Coke Co. that thousands of vacant lots owned by the Frick works in Allegheny, Westmoreland and Fayette counties will be turned over to the public for cultivation free of charge.

**Connellsville**—The production of coke made a gain of 20,000 tons weekly recently, totaling 379,778 tons. The estimated production of the furnace ovens was 234,829 tons, and the production of the merchant ovens 144,949 tons. Shipments amounted to 424,414 tons.

**Portage**—The new owners of the mining operations of George Pearce & Sons, at Puritan, have begun work on a new mining opening. The new owners of the mine are W. T. Yeckley, Wallace Sherbine, Robert Pearce, James G. Patterson and John H. Cooney. The plant will continue to be operated under the name of George Pearce & Sons. The transfer in ownership involved an amount of about \$100,000.

**Pittsburgh**—The members of city council are planning to have the city mine coal on its property at Mayview and Leech Farm. Director Booth issued a statement that owing to the extremely high price of fuel, that a 5-ft. bed of coal could be profitably mined, by driving a tunnel on city property.

#### WEST VIRGINIA

**Fairmont**—A new mine is being opened at Osage, in Monongalia County, on a branch of the Monongalia Ry., by the Osage Coal Co., Samuel D. Brady is president. The opening has been made, the tippie erected and the mine is expected to be producing within a few days. An electric haulage system will be installed, and the mine electrically equipped throughout. The plant will be equipped to handle about 1000 tons a day, although it will take some time to develop the mine to this capacity.

**Stallings**—The first car of coal from the Stote Hurst Co. was loaded recently. This company hereafter will load and ship coal regularly. Arrangements are being made to build four 10-room brick buildings for the miners.

**Hen Lawson**—Preliminary work is being pushed on the mine which Henry Lawson is developing at this point. Mr. Lawson has leased 3600 acres of coal land in this vicinity from the Lawson Heirs Holding Co., and it is his intention to organize a company later. The Island Creek coal bed will be worked. Present indications are promising.

**Logan**—Coal buyers are having a hard time making contracts in the Logan field. The steadily increasing prices of coal have made operators wary of disposing of their entire product. Recently \$3.80 per ton was offered an operator for 100 cars, this offer being refused. The feeling seems to prevail that the price of coal has not reached its upper limit.

The new \$50,000 tippie of the Logan Mining Co.'s Rossmore plant is expected to be completed in August.

**Big Creek**—The Daisy Coal Co., which was only recently organized, has begun operations at its property one mile west of Big Creek. The principal incorporators of this company are: C. W. Jones, E. A. Anthony and Sidney Robertson.

#### KENTUCKY

**Hazard**—The Blue Grass Coal Co. is making extensions and increases in its plant on First Creek, immediately below Hazard. It will be shipping about 1000 tons daily within ten days.

There is quite an improvement noted in the car situation in the Hazard and Perry County coal fields. Operators are getting about all the cars they can load—which is quite an improvement over the past.

The Midland Mining Corporation organized here several days ago, is starting the preliminary work of a new coal development immediately above Hazard on the Louisville & Nashville R.R. The company plans a development to an output of from 700 to 1000 tons daily.

**Whitesburg**—Sandco will be the name of the new town, which will be built on the Thompson coal-land tract immediately up Sandlick Creek, near this city, by J. B. Allen, P. T. Wheeler and others, of Hazard, Ky. The development work, construction of miners' houses, opening of mines, etc., has already been started. Additional lands have been leased, and this is destined to become one of the largest coal operations in the vicinity of this city.

Due to the war with Germany and the efforts of farmers to produce record-breaking crops, there is a scarcity of labor reported at this time from the coal fields of eastern Kentucky. Large transportations are arriving almost every

day from the South, but many of these men do not, however, stay long.

**Frankfort**—Reports made to W. H. Cunningham, secretary of the Kentucky Mine Owners' Association, by R. T. Caldwell, chairman of the Kentucky Workmen's Compensation Board, show that liability insurance of the Kentucky operators is being sharply reduced in cost under operation of the law. Previous to enactment of the law, the rate for non-medical insurance was \$3.50 and liability was limited to \$5000 to any individual and to \$10,000 for any accident. The present rates cover all cases. The basic rate for mines is \$4.24, including medical aid; where the companies employ physicians, it is \$3.82, both subject to credits. At the outset of application of the new Kentucky law the rate actually averaged \$3.94, with medical aid furnished, and \$3.65 without it. Reinspection has been completed of 207 operators who do not carry their own insurance, 45 employing their own physicians and 162 taking the full coverage. So responsive have the operators been to the propaganda of the state board and the Associated Companies that the average rate of the 45 referred to is now \$2.48, which is \$1.17 below the average prior to the reinspection and \$1.02 lower than the rate paid before the law became operative, as well as \$1.34 less than the basic rate. The average of the remaining 162 has been reduced to \$2.84, which is \$1.10 less than the average prior to the reinspection and \$1.40 less than the basic rate. One of these mines has a rate of \$2.59 per \$100 of payrolls.

#### OHIO

**Columbus**—The Buckeye Coal and Railway Co. has shown remarkable activity in development work during the past few months. A new loading point in Perry County, Ohio, has been formed by the construction of a half mile of double track, with high fills and the erection of a two-track tippie. This work was completed in the record time of 34 days from its start. The company is also building five miles of railroad in the Bailly Run district, Athens County, to connect with the Kanawha & Michigan at Millfield. The company has also acquired three mines of the North Hocking Coal Co. and also three mines of the Globe Coal Co., both in the Athens district. The company has also secured the output of the Aumiller & Knight mines at Sand Run on a permanent agreement.

**Steubenville**—Big dealings in Jefferson County land for coal stripping purposes are being reported daily, and the greatest activity in land transfer in the history of the county is under way. Through the formation of large companies, a great part of the capital of which is controlled by Steubenville, Wheeling, Cleveland and Pittsburgh capitalists, it is estimated that over 100,000 acres of this county are now either under option or have been taken over for stripping purposes. With such companies as the Wayne Coal Co., Superior Coal Co., Unity Coal Co., Roby Coal and Mining Co., Apex Coal Co., and others, operating or preparing to operate in Jefferson County, the outlook for a record production of coal is bright. All of the above companies have adopted the stripping method of operation.

#### INDIANA

**Terre Haute**—Fire at the surface of the Speedwell coal mine caused a loss of \$25,000 on buildings and equipment recently and compelled a shutdown of this and another mine, which relied on the Speedwell for power, throwing 500 men out of work.

#### ILLINOIS

**Springfield**—Failure to properly sprinkle the old Capital mine is alleged as criminal carelessness on the part of the Springfield District Coal Mining Co. in two suits for \$10,000 each filed in the Sangamon County Circuit Court against that company. The plaintiffs are Mrs. Catherine A. Young and Mrs. Katie A. Young, widows of Frank A. Young and George H. Young, shotfrrs, who were killed in an explosion Jan. 20, which wrecked a part of the mine. The petitions allege that the dust exploded from a defective shot.

**Herrin**—The No. 2 mine of the Watson Coal Co. has been sold to Milwaukee parties for \$40,000, under orders of the Federal Court. They take immediate possession. The same people have taken an option on the mine of the Carterville & Herrin Coal Co. here and have placed \$10,000 earnest money. The entire output of these mines is to be shipped to Milwaukee.

**Tamaroa**—The Paradise & Franklin County Coal Co., a new corporation, has secured lease of several thousand acres of coal lands near here. Preparations are under way for the sinking of the largest mine in southern Illinois. The Northern States Coal and Mining Co., of Chicago, is interested in the new corporation, together with George Dowell and Cleoro Barber, of Du Quoin, and W. A. Lefont, of St. Louis.

**Sesser**—The Modern Coal Co. has contracted with Jones & Avis, of Plymouth, Ill., for sinking the shaft of a new mine to be sunk in Franklin County, near this place. The Modern Coal Co. is owned by stockholders of the West Frankfort Coal Co. Jesse Dimond is one of the large stockholders in both companies.

**De Soto**—The Jackson County Coal Co., which has acquired the Chicago-Carbondale mine here,

has announced that it will pay to the miners \$4000, which was due them when the mine went into the hands of a receiver several years ago. The money will be divided among about 100 employees.

**Carlville**—Drills have arrived for testing the coal fields in Macoupin County, on which leases have been obtained by A. W. Crawford and A. M. Crawford. The company will drill upon every mile of the lands it is intended to develop in the new field.

## Personals

**Noble Montgomery**, of Tunnelton, W. Va., electrician at the Tunnelton mine of the Merchants Coal Co., has been promoted to the position of superintendent.

**H. K. Rahilly**, mining engineer with the U. S. Bureau of Mines, has resigned his position to accept one with the Anaconda Copper Mining Co., at Butte, Montana.

**O. C. Harmon** has resigned his position with the Pennsylvania R.R. rate department at Uniontown to become associated with other Uniontown men in the coal business, near Dawson.

**L. S. Bovee**, of Erie, Penn., is in charge of the interests of the Pittsburgh & Erie Coal Co. in central Pennsylvania and has his offices in the Pantall Building, at Punxsutawney, Penn.

**Superintendent Elmer Jones**, of the Mill Creek Coal Co., New Boston, Penn., has named Frank B. Patterson as outside superintendent at the collieries of the company and Morgan Beddoe has been made a foreman.

**Charles Cockill**, recently with the Main Island Creek Coal Co. has resigned his position and accepted one as assistant superintendent of the Modoc Colliery of the Turkey Gap Coal and Coke Co., at Springton, West Virginia.

**G. M. Shoemaker**, formerly manager of the LaFollette Coal and Iron Co., LaFollette, Tenn., from which position he resigned Apr. 1, is now president of the Red Dragon Coal Co., with offices at 905 Union Central Building, Cincinnati, Ohio.

**Roy T. Wright** is to succeed J. C. Stras as general manager of the Pawama Coal and Coke Co. Mr. Wright has been superintendent of the Warrior Coal Co., of War, W. Va. Mr. Stras resigned to look after new interests in McCan, Kentucky.

**Washington Lilly**, who has been employed as mine foreman of the Modoc Colliery of the Turkey Gap Coal and Coke Co., of Springton, W. Va., has resigned to accept a position in the same capacity with the Thomas Coal Co., at McComas, West Virginia.

**W. N. Cloggett**, who has been in charge of the development of the Flat Top Pocahontas Coal Co. property at Herndon, W. Va., has resigned to accept a position as chief engineer of the Weyanoke Coal and Coke Co., and its allied company the S. J. Patterson Pocahontas Co.

**Paul L. Weaver**, formerly a traveling salesman for the George M. Jones Coal Co., covering northern Ohio and Indiana, has opened a jobbing business for himself, with temporary offices in the Nell House, Columbus, Ohio. He will handle a portion of the output of several mines in the Hocking Valley and Cambridge fields.

**B. W. McClure**, for some time superintendent of the mines of the Davis Coal and Coke Co. at Beryl, W. Va., and later connected with the Abram's Creek Coal Co., at Oakmont, has been made general superintendent of three mining companies; namely, the Abram's Creek Coal Co., Monongalia Coal and Coke Co. and the Osage Creek Coal Mining Co.

**John O'Connor**, who has been in the auditing department of the Rochester & Pittsburgh Coal and Iron Co., at Punxsutawney, Penn., has been appointed to take charge of the new Rochester, N. Y., offices of the Coal Run Mining Co. and the Tide Coal Mining Co. Lucius W. Robinson, Jr., general manager of these companies, will also have his offices in Rochester.

**Edward Flynn**, assistant district superintendent of the Delaware & Hudson Co., in the Plymouth, Penn., field, has received another promotion, he being appointed general superintendent of the Gravity district, near Scranton. Mr. Flynn, who is young in years, began his employment with this company as a slate picker. He will be succeeded by Jacob Brenton, a mining engineer, of Scranton.

**D. W. Farquahson**, who has been located at Landgraf, W. Va., for the past eight years as foreman of the Empire Coal and Coke Co., has resigned his position and accepted one as outside superintendent of the Lathrop and Panther Coal companies at Panther, W. Va. He succeeds W. S. Leckie, who has been promoted to the position of general superintendent of the Leckie operations at Affex.

**A. J. Salzer** has severed his connection with the Copen Creek Coal Co. and the Quaker Splint Coal Co., where he was general superintendent and engineer for the past three years, and has organized the Pittsburgh Splint Coal Co. and

the Cedar Creek Coal Co., with general offices at Sutton, W. Va., and operations at Braxton and Exchange. A power plant and tipples with shaker screens will be erected.

**Percy Tetlow**, of Leetonia, Ohio, district official of the United Mine Workers of America, despite the fact that he is married and has several children, recently offered his services to the Government by enlisting as a private in the regular army. Mr. Tetlow is prominent in labor circles in Ohio and is a former state representative of Columbiana County, also a delegate to the Ohio constitutional convention.

**Charles E. Reynolds**, superintendent of the Edna No. 1 mine of the Pittsburgh & Baltimore Coal Co. has been promoted to the position of mine inspector of the United Coal Corporation with headquarters at Pittsburgh, Penn. This office was made vacant by the resignation of William H. Brown. William Bulger, foreman of the Edna No. 1 mine, has been promoted to the position of superintendent, while Edward Gibbany, assistant foreman, has been promoted to foreman.

## Obituary

**Otto M. Reiss**, 26 years of age, treasurer and director of the C. Reiss Coal Co. and the Reiss Steamship Co. of Sheboygan, Mich., died recently following an operation a week previously for appendicitis. Mr. Reiss was the youngest of the Reiss brothers, and one of the best known young men in eastern Wisconsin.

**Philip H. Goodwin**, electrical engineer of the Pond Creek Coal Co., Stone, Ky., was electrocuted on Apr. 30 when repairing a break in an electric line at the mine, by touching a wire fence which was heavily charged. He was 31 years of age and a graduate of the University of Cincinnati. He had been with the Pond Creek Coal Co. for three years.

## Industrial News

**Norfolk, Va.**—The Virginian Railway Co. has let contracts for the enlarging of the coal piers at Sewalls Point, at a cost of \$750,000.

**Worthington, W. Va.**—A spur will soon be built from the Fairmont-Helens Run R.R. for the accommodation of the Bethlehem Coal Co.

**Pittsburgh, Penn.**—The Bessemer Coke Co. has sold 1000 acres of its coal lands in the Fetterman district of West Virginia to Clarksburg capitalists.

**Washington, D. C.**—The large coal map of the United States, which has been prepared under the direction of M. R. Campbell, of the Geological Survey, now is being printed.

**Nashville, Tenn.**—Retail coal dealers here have announced that sales of coal to residents this season will be on the spot basis only and that no orders will be taken for future delivery.

**Washington, Penn.**—The Lilly Coal and Coke Co. has purchased 300 acres of coal land a few miles south of Washington and will develop the property at once. The consideration for the property was \$300 per acre.

**Meyersdale, Penn.**—J. F. Naugle has just closed a deal for the purchase of between 400 and 500 acres of coal land in Somerset County. The land is along the Somerset & Cambria branch of the Baltimore & Ohio R.R.

**Pittsburgh, Penn.**—Heavy wind recently interfered with the movement of boats and other craft in the upper pools of the Monongahela River. This wind was not sufficiently strong to cause the laying up of any of the boats, but part of the day they made but little progress.

**Sunbury, Penn.**—While excavating the foundations for the new \$150,000 post office a bed of high-grade anthracite coal was struck by the drillers. The coal was found at a depth of 80 ft., but upon an exploration the vein was found to be only 3 in. thick.

**Somerset, Penn.**—Somerset County people are much interested in the report that a new branch line will be built by the Indiana Creek Coal and Coke Co., over the abandoned South Penn road to Somerset, tapping the big coal tract recently taken over by the Mellons of Pittsburgh and D. B. Zimmerman.

**New York, N. Y.**—The New York retail trade was represented at the Federal Trade Commission hearing in Washington on May 1 by a delegation composed of Arthur F. Rice, commissioner of the Coal Merchants' Association of New York; George Eitz, Olin J. Stephens and Mervin R. Schenck.

**Louisville, Ky.**—Coal operators and all other employers of the state have been advised that employment of minors in violation of the terms of the state child labor law invalidates the provisions of liability insurance and of the provisions of the Workmen's Compensation law in cases where such illegally employed minors are involved.

**Yatesville, Penn.**—Owing to a cave-in of the surface over an old Pennsylvania Coal Co. mine

workings at Butler colliery, traffic was completely tied up on the Delaware & Hudson R.R. from 9 o'clock at night until 6 the next morning on May 1. The cave-in was about 100 ft. in length and extended out on both sides of the railroad track for about 40 ft. and was nearly 50 ft. in depth.

**Washington, D. C.**—Congress has been flooded by an anonymous appeal for the assessment of an annual tax of \$1 per foot-acre on all coal lands held out of use. Such a tax would yield over \$1,500,000,000 a year, it was stated, and would reach speculators only, the statement says, and would remove a great restriction on production, due to the fact that the high price of land makes it unprofitable.

**Fairmont, W. Va.**—Announcement was recently made of the purchase by Alexander Watson of the entire stock of the Old Dominion Coal Co. This firm owns important coal properties near Reynoldsville, in Harrison County. At present one mining plant is located on the property, which is producing about 400 tons of coal per day. It is the intention to construct a new opening at once and to increase the production to 1000 tons daily.

**Columbus, Ohio**—Coal and iron shipments are to be given preference over other kinds of freight handled by the Toledo & Ohio Central R.R., as a result of orders to all agents sent out by A. F. Filmore, superintendent of car service. Officials of the Public Utilities Commission, who have been investigating side-tracking of coal shipments, said when the order was issued that "if every railroad would follow suit the coal shortage would soon be a thing of the past."

**Logan, W. Va.**—The Diamond Construction Co. is now building a large number of new houses to care for the increased number of miners who will be employed by the Logan Coal Co. This firm is building 100 houses for the Logan Mining Co. at Irving; 40 at Rossmore, 7 at Ethel; and between 60 and 70 at the head of Buffalo Creek, for the Loma Mining Co. A number of houses are also being constructed on Huff Creek for the Mallory Coal Co., which is rapidly increasing its coal property.

**Columbus, Ohio**—Coal-carrying roads in Ohio have announced an increase of 15c. a ton in coal rates, effective June 15, for the purpose of enabling them to meet the present emergency and the financial condition brought about by the increased cost of labor, equipment, etc. The increase is said to be part of the program of the railroads for higher rates, based upon the tentative approval of the Interstate Commerce Commission. It is doubtful, however, whether the Ohio Public Utilities Commission will approve the increase.

**Reading, Penn.**—There is a rumor that, if the price of anthracite continues to soar, the Philadelphia & Reading Coal and Iron Co. may establish its own yards in the cities and sell direct to the consumer. Many years ago the Reading maintained its own yards in Philadelphia, when orders for fuel were accepted at all telegraph offices. If this is done, it will not be a surprise to either the dealers or the consumers. For some time the belief has been growing that the company has something like this in view, because of the scant shipments to some cities.

**Boston, Mass.**—Mayor Curley, of this city, called a conference of heating, coal and oil men last week to consider the advisability of using oil for fuel in city buildings instead of coal. The city has experienced great difficulty in obtaining coal the past year, and it is hoped that the use of oil will at least insure the city of a constant supply, even if it does not effect a saving in money. Although the oil men admitted that the price of fuel has doubled since 1915, they maintain that there would be a saving in labor cost. The Mayor turned the proposition over to the city engineers for further investigation.

**Charleston, W. Va.**—The Chesapeake & Ohio R.R. Co. has purchased the property and land holdings of the Four States Coal Co., operating mines at Dorothy and Sarita, on the Coal River extension of the Chesapeake & Ohio. Three million dollars was paid, including the cost of securing the withdrawal of numerous contracts which had been given the Four States company for coal previous to the sale. The two mines are in the Winifrede splint seam and have a daily output of about 4000 tons. This output, together with that of the Coal Valley Coal Co. and the Keyser Coal Co., operating in Kentucky, will be used for the railroad for engine fuel.

**Boston, Mass.**—Six of the largest steam colliers in Boston engaged in the transportation of coal have been tied up by a strike of the men for an increase in wages. These are the "Hamden," "Norfolk," "Transportation," "Coastwise," "Middlesex" and "Bristol," almost all of which are used in transporting contract coal to the various New England railroads on long-term charters. The strike is seriously affecting the coal supply of the railroads, as they depend upon the uninterrupted service of these boats. The owners of the vessels claim that they cannot advance wages as the vessels are receiving only from 60 to 80c. per ton freight rate, while present-day charters are being made at a rate of \$4 to \$5 per ton.



# Market Department

## GENERAL REVIEW

New anthracite prices out and the demand for coal as urgent as ever. Another sharp upward swing to the bituminous market. Shipments on contracts inadequate and consumers bidding aggressively for tonnage. Stampede for coal in the Middle West causes almost panic conditions.

**Anthracite**—The announcement of the new prices which have apparently been sanctioned by the Federal Trade Commissions has cleared up the uncertainty hanging over the trade, though the struggle for coal is as keen as ever. The demand from consuming interests has never been more urgent even during the most severe weather of mid-winter and the patience of all members of the trade is being severely taxed, especially in view of the very trying winter season just finished. There is practically no competition for business in retail circles, and only the most favored customers have been able to lay in any surplus coal, this too, in most instances, being at the full winter circular. It is certainly a most extraordinary market for this period of the year. It is not unusual for retail dealers to spend practically all of their time scouring the wholesale market for extra tonnages. Steam coals continue in the same urgent demand and further advances proportional to those made on the domestic sizes are anticipated very shortly.

**Bituminous**—There has been another well defined upward swing to the bituminous market. Government requisitions have become exceedingly heavy, interfering with contract obligations and there are also alarming rumors that considerable tonnages are to be commandeered and that preparations are under way to give preferential movement to government coal that promises to still further restrict commercial shipments. Coast-wise movement has been badly handicapped by the inclement weather and also by the strict regulations governing the movement of boats in harbors which has been the occasion of much delay, particularly at Newport News. The fact that the railroads are unable to meet the demands at this season of the year is regarded as decidedly ominous and the situation is rapidly approaching a point where large consumers are facing the prospect of being unable to meet the tremendously increased fuel costs. Incipient labor troubles in many of the mining fields, together with the confiscation of coal by the railroads, has caused some of the operators to fall seriously behind on their contracts, forcing the consumers into the market for relatively large tonnages.

**Lake Trade**—Another heavy wave of railroad buying, apparently for stocking purposes, has caused a further and much stiffer advance in prices than has yet occurred. As anticipated, it is becoming obvious that there is no top to the market, and nothing short of Government regulation will fix any limit on prices. Incoming shipments are scarcely sufficient to meet requirements, and the large consuming interests are bidding aggressively for tonnage. Unseasonably cold weather has caused an exceptionally heavy consumption of coal for heating purposes, tending to further aggravate the situation. Speeding up of industrial operations to meet war requirements is also causing a constantly increasing demand. While Lake navigation has been nominally opened for several weeks, the movement so far is very slow, due to continued interference as a result of heavy ice. However, there is considerable loading of coal on vessels that wintered at the lower Lake ports, while the first boat from the upper port with iron ore arrived the middle of the current week.

**Middle West**—The difficulty in getting coal has created a pronounced anxiety among buyers, resulting in an unexpected stampede for coal that has caused almost panic conditions. Prices have advanced all along the line fully \$1 per ton and it is largely a question of getting coal irrespective of price. The great difficulty as usual lies in the inadequate transportation facilities; cars are not only short but motive power is beginning to show the effects of the strain. The extraordinary demand from the Northwest, due to the depleted stocks there, has also been a big factor in the situation; while the opening of Lake navigation will relieve the pressure for coal in this direction, there is still a very heavy demand in other outside markets such as New Orleans, the extreme western part of Nebraska and Kansas, and as far east as Detroit, which will continue to absorb a large tonnage.

**A Year Ago**—Announcement of the new anthracite circular starts some activity in hard-coal circles. Bituminous quiet but with an excellent undertone. Heavy shipping in Lake trade. Firm situation in the Middle West, particularly on the steam grades. Production expanding.

## Comparative Average Coal Prices

The following table gives the range of mine prices in car lots per gross ton (except where otherwise noted) on 12 representative bituminous coals over the past several weeks and the average price of the whole group for each week:

	Year Ago	May 12	May 5	Apr. 28	Gross Averages
Boston					
Clearfields.....	*\$1.30@1.75	\$5.25@6.00	\$4.75@5.50	\$4.50@4.75	Dec. 30 4.73@5.19
Cambrias and Somersets.....	* 1.60@1.95	5.50@6.25	5.00@5.75	4.75@5.50	1917
Pocah. and New River <sup>1</sup> .....	2.80@2.85	7.00@7.50	6.00@6.25	5.50@5.75	Jan. 6 5.16@5.53
Philadelphia					Jan. 13 4.74@5.11
Georges Creek (Big Vein)....	1.90@2.00	6.00@6.50	5.25@5.50	5.00@5.25	Jan. 20 4.54@4.98
W. Va. Freeport.....	1.20@1.30	5.00@5.25	4.25@4.50	4.25@4.50	Jan. 27 4.64@5.03
Fairmont Gas mine-run.....	1.35@1.45	4.75@5.00	4.25@4.50	4.25@4.50	Feb. 3 4.66@4.86
Pittsburgh (steam coal) <sup>2</sup>					Feb. 10 4.70@4.95
Mine-run.....	† 1.25@1.35	4.50@4.60	3.75@4.00	3.25@3.50	Feb. 17 4.67@5.04
4-in.....	† 1.35@1.45	4.50@4.60	3.75@4.00	3.25@3.50	Feb. 24 4.95@5.29
Slack.....	1.00@1.10	4.50@4.60	3.50@3.75	3.25@3.50	Mar. 3 5.10@5.48
Chicago (Williamson and Franklin Co.) <sup>3</sup>					Mar. 10 5.36@5.61
Lump.....	1.35@1.45	3.25@3.50	3.00@3.25	3.00@3.25	Mar. 17 4.80@5.19
Mine-run.....	1.20@1.30	2.75@3.00	2.50@2.75	2.50@2.75	Mar. 24 4.64@4.94
Screenings.....	1.00@1.10	2.75@3.00	2.50@3.00	2.25@2.75	Mar. 31 4.20@4.44
Gross average <sup>3</sup> .....	*\$1.44@1.59	\$4.64@4.98	\$4.04@4.40	\$3.81@4.12	Apr. 7 4.07@4.36
					Apr. 14 4.01@4.35
					Apr. 21 3.83@4.14

<sup>1</sup> F. o. b. Norfolk and Newport News. <sup>2</sup> Per net ton. <sup>3</sup> The highest average price made last year was \$4.80@5.33 made on Nov. 25. \* Price lower than the week before. † Price higher than the previous week.

## BUSINESS OPINIONS

**Iron Age**—The hysterical reports from Washington of a \$1,000,000,000 outlay for an American merchant fleet, the "diversion to Government uses of the products of every steel mill in the country" and the cancellation of existing contracts between the mills and private buyers have given some concern to private consumers. The fact is that no such drastic action has been determined upon and it is not improbable that the needs of the Shipping Board will be met by the voluntary action of the steel trade. It is certain that under the new Shipping Board program for meeting the submarine peril as quickly as possible, plate and structural mills must furnish in the next year more than the 610,000 tons already arranged for by the Government; but that would not mean of necessity a wholesale cancellation of present orders even in those two lines.

**American Wool and Cotton Reporter**—Large weights of South American wool were sold during the last week, and the total sales for all kinds of wool were 12,000,000 lb. Government orders are chiefly responsible for these big sales. There is no limit in prices and no basis for values. The fact that the British Government is taking a wool census in South Africa is regarded by some as preliminary to its being purchased by the Government.

**Bradstreet**—Distributive trade is repressed, but industrial operations are animated to a high degree. Unparalleled prices for essential foodstuffs, campaigns for thrift, and unseasonable weather, with conditions arising from the war, operate to restrict final distribution of all but the necessities of life. In sections where the weather has been propitious, retail trade holds up well. It is certain that the war has brought out large orders for many products, especially on government account, but the government's plans for raising funds not only overshadow but cause other financial operations to be held in abeyance. Yet the larger commercial interests are doing relatively well, even though there is considerable concern about the altitudes to which prices have risen, and while there is more or less fear lest supplies of goods be insufficient, it is deemed prudent to proceed at a more conservative pace.

**Dun**—A month of readjustment to new conditions has brought little disturbance in business, and only in relatively few instances are signs of special hesitation apparent. Lessening of ordinary demands has continued in some important branches, largely because of the extreme prices, and backward weather has retarded retail distribution of seasonable merchandise in most sections of the country. Commercial failures this week are 297, against 283 last week, 268 the preceding week and 332 the corresponding week last year.

**Dry Goods Economist**—A number of causes have contributed to check the movement of merchandise out of the hands of manufacturers and wholesalers. In many sections of the country temperatures have been lower than retailers had expected. Consumers have held off, as is usual at this between-seasons period, and the advice given in many quarters that people ought to economize has had a deterrent influence. The price of foodstuffs is mentioned by retailers in some centers as having an adverse influence on the sale of dry goods.

**Marshall Field & Co.**—Wholesale shipments of dry goods for the current week are in excess of the corresponding period of a year ago. Road sales for immediate delivery are slightly behind those of last year, although they are in greater volume than a year ago for future delivery. Customers have been in to market in smaller numbers. Collections are better than in the week of 1916.

## CONTRACT NOTES

**Government Coal**—Under date of Apr. 27 the Navy Department has requested bids on coal as follows:

Grade	Delivery At	Tons
Anthracite, pea, egg, nut.....	Iona Isl., Dover, N. J.	2,200
Anthracite, egg size.....	Ft. Lafayette, N. Y.	60
Anthracite.....	Portsmouth, N. H.	1,700
Lump.....	Rixey, Colo.	600
Steaming, run-of-mine Rixey, Colo.		5,600
Unloading and handling of.....	Las Animas, Colo.	5,600

**Baltimore**—The city asked for bids on 11,000 tons of anthracite for heating schools, etc., the past week, and only one bid was received. This was by the Chesapeake Coal Co. and it showed an average increase of \$1.40 over the prices of a year ago.

**Buffalo**—The jobber no longer dares to make a contract price as he has quoted so far under the present market on what he has made that he is already in trouble. Prices began at \$2.75 per net ton at the mines, but they were lately as high as \$4.25, where they appear to have ceased. Mine owners will not guarantee anything. The plea is that they are as completely handicapped as anyone, first by car shortage and then by labor difficulties.

**Cleveland**—The New York Central R.R. is understood to have covered a contract for 300,000 tons per year of Pittsburgh No. 8 mine-run to run for three years at \$1.65 per net ton, f.o.b. mine, based on the new mining scale, effective Apr. 16. It is stated that the Cleveland Ry. Co. will soon be compelled to increase the fare in order to meet the greatly increased fuel bill which is amounting to \$50,000 per month.

**Hamilton, Ohio**—The Anderson & Shafer Co. claims to have lost \$9000 on the last half year's contract of delivering 7500 tons of coal for the municipal plants on account of penalization and the necessity of buying coal in the open market, and has appealed to the members of City Council for a compromise. The coal bid was \$2.25 a ton for a six months' supply and the penalization reached almost 60c. on the ton. For the term of the contract the firm drew only \$1700, refusing the balance on account of penalization.

**Piqua, Ohio**—The Piqua Board of Education has awarded to Flach Bros. the contract for supplying 1000 tons of Thacker coal for use in the schools for next winter, at \$8.15 a ton, which is an advance of \$3 a ton over last year.

**Chicago**—It is understood that a contract for Williamson County coal has been closed with a Milwaukee consumer, involving 40,000 tons, to be delivered during the next 12 months, at \$3 per ton at the mine.

## Atlantic Seaboard

### BOSTON

Hampton Roads coals again in short supply and prices advance sharply. Renewed inquiry for high volatile grades. Movement of Pennsylvania coals hampered by congestion. Wage troubles continue. Anthracite companies advance from 35@50c. over April circular.

**Bituminous**—The pendulum has made another upward swing in Pocahontas and New River. The effort made to increase westbound movement on account of the scarcity of bottoms for Tidewater dumping has now resulted in practically no free coal at Hampton Roads. All the shippers find themselves short even for contract obligations. The spot demand has therefore sent prices soaring again, \$7.50 f.o.b. having been reached at this writing. A few extra requisitions from the Government would make the situation on smokeless coals rather acute.

Meanwhile, this market has developed a broad inquiry for Kanawha and other high volatile coals. It is realized that buyers are not discriminating so much as to grade, and gas coals are beginning to sell well up to the price level of the good steam coals. A large steamer cargo of high volatile is rumored to have sold here at a price in excess of \$10 alongside. This was ten days or so ago, however, and could not be duplicated.

The continuously stormy weather has interfered with coastwise movement, the more so now that regulations as to harbors, etc., are so strict. Furthermore, difficulties over wages on steamers and tugs have been a factor in retarding shipments. Certain boats were tied up an entire week pending negotiations with the unions. Most of the questions at issue have been adjusted, although transportation owners are wondering where the wage increases will end, this all having a bearing on the supply for this territory.

Coal on cars for inland delivery is correspondingly firmer; \$11.50@12 is quoted at Providence and \$12.50@13 at Boston, with the smokeless coals available only in relatively small quantity. For small manufacturers in certain lines the cost of fuel is rapidly approaching the point where shut-downs are being seriously considered.

As for cargo coal there is practically none offering, as the factors who have transportation in hand are needing it for their own use. Moreover, it is getting more and more difficult to arrange for cargoes for future loading. In some cases transportation reporting for coal at Norfolk has been diverted elsewhere because of the lack of coal.

The fact that the Pennsylvania grades are not coming forward in sufficient volume argues unfavorably for the state of things in the summer and fall. The railroads are utterly unable to care for any extra traffic all-rail, and at ports like Philadelphia and New York the scarcity of boats and coal is just as evident as at Hampton Roads.

Congestion at the Boston & Maine transfer points grows worse rather than better, all three now being under drastic embargo. All-rail coal is therefore practically cut off from points on or via the B. & M., and bituminous actually on that road is commanding a premium. A basis up to \$6.50 f.o.b. mines has been paid this week.

Labor and car shortages apparently show no improvement. Shippers of the better grades, especially those on the approved list for the Navy Department, are being so heavily requisitioned by the Government that deliveries on contracts in this territory are materially less than in April. It is also being made plain to operators who have coal sold to various consumers under obligation to deliver manufactured goods to the Government that shipments must be expedited.

Coal yet to be shipped and coal en route that can be sent via the New Haven or the Boston & Albany is quoted at \$5.75@6. Buyers who need coal, however, prefer to buy only on car numbers, under present conditions.

Bituminous at wholesale is quoted about as follows, f.o.b. loading ports at points designated, per gross ton:

	Clearfields	Camb. and Somersets
Philadelphia.....	\$6.50@7.25	\$6.75@7.50
New York.....	6.75@7.50	7.00@7.75
F. o. b. mines.....	5.25@6.00	5.50@6.25
Alongside Boston (water coal).....	11.00@11.50	11.25@11.75

Pocahontas and New River are now quoted at \$7@7.50, f.o.b. Norfolk or Newport News, Va., for spot coal, and \$11.50@12 at Providence and \$12.50@13 at Boston on cars for inland delivery.

**Anthracite**—The circulars announced by the various companies as of May 1, show more of a divergence in prices f.o.b. loading ports than has been the case in many years. For instance, two large factors supposed to be closely allied in selling policy show a variation of 50c. in broken and 35c. in pea. It can be said, however, that prices on these particular sizes are nominal because practically none is coming forward to this market.

The Philadelphia and Reading C. & I. Co. announces the following season basis for domestic sizes, f.o.b. vessels at Port Richmond, Philadelphia, for shipments beyond the Capes of the Delaware, a reduction of 40c. to apply invoices during the current month:

	Egg	Stove	Chestnut
White Ash.....	\$5.75	\$6.00	\$6.05
Shamokin.....	6.00	6.25	6.30
Schuylkill Red Ash.....	6.25	6.50	6.55
Lorberry.....	6.25	6.50	6.55
Lykens Valley.....	6.75	7.00	7.05

For deliveries f.o.b. New York loading port the prices are in each case 10c. higher than the above.

The Lehigh Valley Coal Sales Co. quotes white ash egg at \$5.30, stove at \$5.55 and chestnut at \$5.60, all f.o.b. Perth Amboy, N. J., or 15c. less on each size than quoted by the Reading Co. f.o.b. Port Reading, N. J.

Certain of the company shippers from New York adhere to the previous rate of 75c. on barges to Boston. Until further notice the rate from Philadelphia will be 85c.

"Independent" coal is quoted at \$7.15, f.o.b. mines for domestic sizes.

The "Interim Report" of the Federal Trade Commission under date of May 4 has caused a lot of comment. If anthracite is to be in such ample supply New England dealers would like to have it come along faster. At the present rate of shipments coastwise New England will get about 20 per cent. of its normal supply.

### NEW YORK

Anthracite supplies short with prices for individual product high. New price lists announced. Demand remains strong with heavy consumption. Soft coal market unsettled owing to labor uncertainty. Prices stiff and coal scarce. Bunkering good.

**Anthracite**—The trade is suffering from the lack of coal. There is very little to be had at the New York Tidewater and there is no sign of a let-up in demand, at least until weather conditions become more seasonable. Lower temperatures, some of them record-breakers for this time of the year, have resulted in a continued call for coal and dealers who usually are putting in winter supplies have not yet begun. Scare-heads in daily newspapers calling attention to the lack of supplies have added to the heavy call for coal, householders fearing that unless they filled their bins at once they would be without coal for the coming winter. While this near-hysteria has not as yet entirely subsided, retailers have assured many of their largest consumers that they will be taken care of.

The Tidewater price-lists so far announced show much variation. Those made public by two of the companies shipping from the lower ports show a difference of 15c. per ton in the prices of domestic coals. One of the companies last week announced an increase of 25c. per ton plus the usual 10c. monthly advance over the April price and this week another company announced an increase of 40c. per ton plus the usual monthly advance of 10c. per ton. The prices are for this month only. While no other official announcements have come from the remaining large companies it is understood they have advanced their Tidewater prices 25c., plus the usual 10c. monthly increase.

Tidewater supplies are scarce and retail dealers who flocked to the wholesale district, some arriving before the offices were opened, spent the day hunting for stray cargoes. On Monday it was said that more buyers were on hand than on any other day in months. Many of these came from New England, where the scarcity of coal is pronounced. Rail delivery has been held up by embargoes and high water rates have curtailed shipments.

The companies are short of coal and are not taking on any new orders until those already booked have been filled. Some of the sizes, especially the buckwheat coals, are entirely out of the market. Local wholesale dealers are receiving many inquiries from the West and Canada, some of them from consumers who are large users and are running close to the end of their stocks.

Quotations for individual coals at Tidewater have ranged from \$7 to \$8.50 during the week, but most sales have been around \$8. Pea and buckwheat are scarce and the same applies to rice and barley.

Current quotations, per gross ton, f.o.b. Tidewater, at the lower ports, are as follows:

	Circular	Individual
Broken.....	\$5.30@5.45	
Egg.....	5.30@5.45	\$7.75@8.00
Stove.....	5.55@5.70	7.75@8.00
Nut.....	5.60@5.75	7.75@8.00
Pea.....	4.00@4.45	6.75@7.00
Buck.....	4.00@4.15	6.75@7.00
Rice.....	3.40@4.05	5.00@5.25
Barley.....	2.90@3.10	3.50@3.75
Boiler.....	3.00@3.15	

Quotations for domestic coals at the upper ports are generally 5c. higher on account of the difference in freight rates.

**Bituminous**—The local market shows more strength and there is comparatively little spot coal to be had. Good weather for consumption

has kept stocks down and many industrial plants are said to be nearly out of fuel. Receipts at Tidewater have not been up to expectations because of the low production and delay in shipments. Car supply is better but the miners are still debating the provisions of the new wage agreement reached in Philadelphia last week and which must be ratified by the mine-workers before becoming effective. Labor is becoming shorter and those who are remaining in the mines are not showing any disposition to work steadily.

While the market is not crowded with buyers willing to close deals off-hand, there is a feeling that conditions are going to be much worse and everybody seems anxious to provide for the future. Sales are not being rushed and while stocks are low, no one who really wants coal is unable to get it.

There is a heavy demand from the New England States and with curtailed shipments from Hampton Roads and other Southern ports it is evident that the Tidewater market will be called upon to supply considerable coal to that section of the country. Rail delivery is slow, most of the New Haven line being tied up by embargoes.

Many inquiries are coming to local middlemen and miners from the far West. Small operators could sell double their present output.

There is a heavy demand for bunker coal, many vessels arriving here from foreign ports.

Sales of loaded boats were reported at 50c. above dock prices. The coke market is active, quotations being around \$8, f.o.b., one buyer it is reported having an option on 15,000 tons at that price.

Current quotations, per gross ton, f.o.b. Tidewater, for various grades, are as follows:

	Port Reading	South Amboy	Mine Price
George Crk.....			
Big Vein.....	\$7.50@7.75	\$7.50@7.75	\$5.75@6.25
Tyson.....	7.25@7.50	7.25@7.50	5.50@6.00
Clearfield.....	7.00@7.50	7.00@7.50	5.25@5.75
South Frk.....		7.25@7.50	5.50@6.00
Nanty Glo.....		7.25@7.50	5.50@6.00
Som'r. Co.....	7.00@7.25	7.00@7.25	5.25@5.75
Que'ho'ing.....	7.25@7.50	7.25@7.50	5.50@6.00
W. V. Fairmount.....			
Th'r'qua.....	7.00@7.25	7.00@7.25	5.00@5.50
Mine-run.....	7.00@7.25	7.00@7.25	5.00@5.50
West. Md.....	6.75@7.00	6.75@7.00	5.00@5.50

### PHILADELPHIA

Anthracite prices for May show big advance with individual quotations slightly higher. Federal Trade Commission influences shippers. Retail trade panicky. Cool weather causes continued consumption. Good shipments promised for the summer. Tightening credits. Increase in steam coal prices expected. Bituminous moves upward from 50c. to \$1. Strikes in several districts. Contract shipments short.

**Anthracite**—Now that the May prices have been announced the struggle to get coal has commenced anew. There is no denying that the retail trade has been badly upset by the slowness with which most of the companies announced their May schedule. The Lehigh Valley Coal Sales Co. came out promptly with their new circular, but while the Philadelphia & Reading Coal and Iron Co. seems to have surrendered the initiative in this respect, still none of the other shipping companies seem willing to do anything in the way of prices until the largest company is heard from.

However, the Reading circular was sent out late on May 4, although dated the first, announcing an increase of 40c. over the prices prevailing during April. This increase of 40c., of course, included the regular monthly increase of 10c., and it is therefore taken for granted that the 30c. increase in the basic circular represents this company's calculation of the increased cost of production due to the recent advance in wages granted to the miners.

Quickly following the announcement of the Reading Co. the other shippers sent out their lists, which for the larger companies were about on a par with the Reading circular with the exception of pea coal. This size is now variously priced by the more important shippers at \$2.70, \$2.85, \$3 and \$3.10. The individual shippers have come out with circular prices from 10c. to 25c. higher than the larger companies on the prepared sizes, while their pea coal quotations range from \$3.10 to \$3.50 per ton. It is interesting to note that the delay in announcing the new circular was due to the fact that the representatives of the various companies were busy appearing and giving testimony before the Federal Trade Commission in Washington and the new prices were actually issued while that body was still in session, which lends color to the belief that the commission might have in some way sanctioned the increase due to the increased wage scale. Another important feature is that the prices issued by the larger companies are now uniform for all districts. Heretofore circulars by the same company varied in different sections of the country.

Considerable uneasiness is felt by the strictly brokerage houses in the city owing to the statement made by the Federal Trade Commission this week that it is to the best interests of all concerned that coal be marketed directly by the company producing it. The commission indicated that it had evidence that proved there was con-



siderable abuse in the practice of commission houses handling sales of coal in times like the present.

The retailers have never experienced such panicky times as they are now going through; were it the dead of winter instead of spring the demand could not be more general or insistent. The unusually cool weather has made the continuance of heater fires a necessity, but even at that if the public would be content with receiving a ton at a time much of the excitement could be averted. With the small stocks in the dealers' yards it has been impossible to make any impression on the orders in hand, and when the buyers find their orders are not being filled promptly they are becoming alarmed and starting to buy promiscuously. The dealers, already aggravated after a trying winter, have also become unreasonable and torment the shippers with impossible demands. The offices of the shipping companies have been so besieged with disgruntled dealers that routine work has been neglected. The patience of the selling agents has been so tried that in many instances the good feeling between buyer and seller is disappearing.

There will be sufficient coal come to this city to fill all the cellars of the people who will pay cash for it, but this will not be accomplished before the end of the summer. Many have already paid full winter rates to have their bins filled and even then it must be said that this class has been favored by the dealers. Their books, with few exceptions, are filled with orders taken late in March or early April at the lowest prices, but these have been neglected for the higher priced business. Where a buyer has a low price order placed with a dealer who keeps postponing delivery the customer usually becomes scared and orders from a competitor at a higher rate; this seems to be to the entire satisfaction of the retailer, who is glad to be relieved of the responsibility and figures that where he loses one customer in this manner he will get a new one in the same way. There is practically no competition in the trade now and most dealers have entirely abandoned their newspaper advertising.

The demand for all sizes is far beyond the output. There is probably more chestnut in the bins of the dealers than any of the other family sizes and there is certainly less pea coal. Some dealers have abandoned hope of supplying their trade with the latter size and are persuading their customers to use chestnut.

It is difficult to believe that in other years dealers could buy pea coal at bargain prices during the spring and summer months and that thousands of tons were placed in storage. Last May when the circular price was \$2.40 the large shippers stored thousands of tons because the individuals were making attractive offers for the season. Just one year later the same coals are bringing from \$3.50 to \$4 here and from \$4.75 to \$5 to outside markets.

Many attractive offers, especially from New England, have been received the past week and sales have been made to outside points at prices considered prohibitive here. Sales have been recorded for considerable tonnage at from \$6.75 to \$7 at mines for egg, stove and chestnut and unless the announcement of the Federal Trade Commission is heeded the end is not yet in sight. In this connection it is rumored that some of the individual shippers are beginning to interpret the rulings of the Commission as being applicable to them.

The retailers continue to have impressed upon them quite firmly that all payments must now be made strictly in accordance with terms. The shipping companies, knowing that a far greater percentage of the consuming trade than ever is laying in winter supplies, want to feel that dealers are being paid cash for this business and that is another reason why they are tightening the credit lines. Several dealers have had this forcibly brought to their attention of late.

The demand for all the steam sizes shows no abatement whatever and it is rather expected that new prices will be in force in a short time in equality with the advances on the domestic grades. Most of the companies who have been closing contracts at the old rates are understood to have taken about all of this business that they desire.

The prices per gross ton f.o.b. cars at mines for line shipment and f.o.b. Port Richmond for tide are as follows:

Line Tide	Line Tide
Broken.... \$4.90 \$6.05	Buck..... \$2.50 \$3.40
Egg..... 4.05 5.15	Rice..... 2.00 3.00
Stove..... 4.30 5.50	Boiler..... 1.80 2.90
Nut..... 4.40 5.45	Barley..... 1.50 1.75
Pea..... 3.00 3.90	

Note—The Reading figures are used on the prepared sizes. On pea coal we have taken an average of the different quotations.

**Bituminous**—Prices have continued to move upward, until some are as much as a dollar higher than last week, although the average increase has been about 50c., with some at 65c. The market is still in a hectic condition and price changes are at times quite sudden, being governed almost entirely by rapidly changing conditions in the mining regions. Despite the fact that the miners of the Central District have been granted increases up to 30 per cent., together with the check-off, labor disturbances are now even

more serious than before. The difficulty now seems to be among the unorganized miners, who in many instances have been receiving higher wages than the union men, but are asking for still more. As a consequence coal from Clearfield county is particularly scarce and this has affected the prices on other coals. Labor difficulty has also developed in the West Virginia fields, particularly in Logan and Taylor Counties, where the men are insisting on an eight-hour day. Because of this prices for most Fairmont coals are now at about the same level.

Receipts locally have been somewhat light recently and several of the larger manufacturing plants have been running on a little closer margin than is to be desired and have been compelled to go into the open market for fairly heavy tonnages. It was thought that when contracts were made for the present year that deliveries would be fairly certain but many complaints are being heard from consumers, though it is only fair to say that heavy confiscation by the railroads has entirely upset calculations. While the railroads are still taking some coal in this manner it is felt that for a time at least there will be considerable improvement.

Many large consumers continue to maintain purchasing representatives in the mining regions but the general opinion is that their activities only cause a stronger competition as they are at times actually bidding against themselves for fuel.

Slack coal which has been in particularly heavy demand for almost two months shows no change and is much short of the demands at all times.

While the car supply has improved slightly, it does not seem to meet more than 20 per cent. to 30 per cent. of the demand.

The prices per gross ton f.o.b. cars at mines are as follows:

Georges Creek Big Vein.....	\$6.00@6.50
South Fork Miller Vein.....	6.00@6.50
Clearfield (ordinary).....	5.50@6.00
Somerset (ordinary).....	5.50@6.00
West Va. Freeport.....	5.00@5.25
Fairmont gas lump.....	5.00@5.25
Fairmont gas, mine-run.....	4.75@5.00
Fairmont gas, slack.....	4.75@5.00
Fairmont lump, ordinary.....	4.75@5.00
Fairmont mine-run.....	4.75@5.00
Fairmont slack.....	4.75@5.00

#### HAMPTON ROADS

Sharp advance in price. Movement from mines very light. Heavy demand for high-volatile and high-carbon descriptions. Bunker demand heavy.

Prices have taken a jump, and with the heavy demand from all quarters and reduced receipts, conditions are rapidly approaching those of last winter. At this writing the Tidewater movement from the mines is probably lighter than for the past several months. Pocahontas and New River run of mine has been sold at \$7.60 per gross ton, f.o.b. Hampton Roads, and high volatile run of mine as high as \$6.25. Free coal is practically unobtainable at times and when any can be secured a fancy price must be paid. Bunker steamers are numerous and the tonnage taken by them is large; some agencies have refused to supply sufficient bunker coal for the return voyage to the United States, except at an increased price for all coal taken over and above normal requirements.

The regulations covering navigation within Hampton Roads under present conditions tend to cause unusual congestion at the piers. At Newport News this has caused frequent delays while Sewalls Point and Lamberts Point have not suffered so badly in this regard.

It is reported that the Navy Department has purchased the discharging plant and storage space of W. T. Tams, Jr., at Sewalls Point. It is understood that the storage space will be enlarged to provide for 300,000 tons of coal.

All coastwise barges, tugs and steamers have increased the wages of all members of the crew, not including the masters of tugs and steamers, but including the masters of barges. Several tows were held up here a few days on this account. The Government war insurance bureau is reported to have declined to insure American schooners sailing for the war zone.

Local retailers announce May prices for anthracite at \$9 per net ton, delivered, less 50c. per ton for cash. This is a reduction of 50c. per ton from winter prices.

Spot prices for Pocahontas and New River run-of-mine for shipment foreign and coastwise are \$7.50@8 per gross ton, for bunker delivery \$8@8.50 per gross ton, plus 15c. per ton trimming, for local delivery \$7@7.50 per net ton on track. High volatile run-of-mine \$6@6.50 per gross ton. Anthracite \$9 per net ton delivered, less 50c. per ton for cash. Retailers announce that no deliveries will be made after noon on Saturday during the months of May, June, July, August and September.

Dumpings at the Hampton Roads piers for the past several weeks were as follows:

	Apr. 14	Apr. 21	Apr. 28	May 5
Nor. & West....	119,340	142,018	88,577	104,677
Ches. & Ohio....	106,188	120,257	126,533	104,567
Virginian.....	66,383	99,249	116,468	89,366
Total.....	291,911	361,524	331,578	298,610

#### BALTIMORE

Spectacular price advances in a feverish market that is full of rumors. Receipts light. Anthracite men establish the winter schedule.

**Bituminous**—The bituminous market continues to advance as labor shortage becomes more acute, wage scales increase, transportation becomes more uncertain and the air is full of stories of the government commandeering coal and preferential shipment of fuel for Federal purposes. The Central Pennsylvania advance in miners' pay was followed by an increase of 10 per cent. and an eight-hour day in the Georges Creek region. In addition, the miners at a number of smaller operations along the West Virginia line of the B. & O. went out on a demand for union recognition during the past week. Even mines having the highest wage scales are having great difficulty in keeping sufficient men to obtain a fair production.

The report that the government had commandeered the entire output of one mining company and part of the output of another, at a price of \$3.50 a ton, thus canceling important private contracts, also had its influence on the situation. At the headquarters of one of the companies concerned, here, it was stated that confirmation of the commandeering order was lacking. Uncertain car movement also limited the supply of fuel at this point, and no surplus coal is accumulating here as is customary in the spring time.

Prices to the trade at the mines per gross ton are about as follows: Georges Creek Tyson, \$6.50; Somerset, \$6.00; Quemahoning, \$6.25; Clearfield, \$6; Freeport, \$5 to \$5.50; Fairmont gas, three-quarter, \$5; run-of-mine, \$4.75; slack, same, \$4.75.

**Anthracite**—There has been practically none of the spring discount coal of the Philadelphia & Reading Coal and Iron Co. received here, and other firms have also been charging the full circular or thereabouts. The announcement of an advance of 25c. a ton for May by the Lehigh Valley of the intention of the Susquehanna to issue a new schedule and the announcement of an increase by the P. & R. of 30c. for May, or only 10c. off the full winter schedule, confirmed the belief that the local trade was taking the right course. Meanwhile, consumers are getting nervous and are eagerly putting orders on the books at winter schedule. Local coal men, with short yard supplies and little likelihood of any large part of their April or May orders coming through, are not promising to do much.

## Ocean Shipping

#### OCEAN FREIGHTS

Although we have chartered a number of steamers for export coal since our last report, none of these fixtures have been reported, and none of them are unusually interesting, as they are all at or about rates recently quoted. Freight conditions are practically the same as a week ago.

We would quote freight rates on coal by steamer as follows:

Europe	Apr. 30	May 7
West Coast Italy	\$75.00@100.00	\$85.00@100.00
Marseilles.....	75.00@100.00	80.00@100.00
Spain(Atlantic)*	30.00@ 36.00	30.00@ 36.00
Spain(Med't'n)*	32.40@ 38.40	32.40@ 38.40

Note—Charters for Italy, France and Spain read: "Lay days to commence on steamer's arrival at or off port of discharge."

South America		
Montevideo....	\$28.20 about	\$28.20 about
Buenos Aires....	28.20 about	28.20 about
Rosario.....	30.00 about	30.00 about
Rio Janeiro....	\$25.00@27.00	\$26.00@28.00
Santos.....	\$28.00@30.00	\$28.00@30.00
Chile(good port)	17.00@18.00	17.00@18.00

West Indies		
Havana.....	6.00 about	5.75 about
Cardenas, Sagua	7.00 about	7.00 about
Cienfuegos.....	8.00 about	7.75 about
Port au Spain...	10.00 about	10.50 about
St. Lucia.....	10.00 about	10.50 about
St. Thomas.....	8.50@ 9.00	8.75@ 9.00
Barbados.....	10.00 about	10.50 about
Kingston.....	7.25@ 7.50	7.00@ 7.25
Curacao.....	9.50 about	9.50 about
Santiago.....	8.00@ 8.25	7.75 about
Guantanamo....	8.00@ 8.25	7.75 about
Bermuda.....	6.00@ 7.00	6.00@ 7.00

Mexico		
Vera Cruz.....	9.00@10.00	9.00@10.00
Tampico.....	9.00@10.00	9.00@10.00

\* Spanish dues for account of cargo. \* And p.c. \* Or other good Spanish port. \* Net.

W. W. Battie & Co.'s Coal Trade Freight Report.

#### COASTWISE FREIGHTS

From Norfolk to Boston barge freights are still quoted at \$5@5.25, but neither supply nor demand is of any moment. On account of coal shortages inquiry is light. New York rates to Boston are \$2.75@3 with the same dearth of loading orders. To Providence \$2.25@2.50 continues to be quoted.

## Lake Markets

### PITTSBURGH

**Stiff rise in spot market. Heavy buying by railroads. Lake shipments fairly large.**

The spot market has undergone a further and stiffer advance, prices being up about \$1 a ton as compared with a week ago. The market advanced sharply the last two days of last week and the stronger position is fully maintained this week, with steam at not less than \$4.50 and gas \$5.

The advance is attributed chiefly to heavy railroad buying, apparently for the purpose of stocking up against the scarcity expected from the Lake movement as well as for the purpose of releasing cars for the movement. More than a month has elapsed since the usual contract date and yet little if any railroad contracting has been done. The railroads always receive a special price, but all prices are so high that there is difficulty in reaching an understanding what would be a concession that would be in keeping with the precedents. A price of \$2.50 for the remainder of the twelvemonth has been talked of, this being higher than railroads have bid and lower than has been quoted them.

There is now a fairly heavy coal movement Lakeward, but with prospects that there will be ample vessel supply to take the coal. Many vessels that wintered at lower Lake ports have been loading coal, while the first vessels with ore from the head of the Lakes arrived the middle of this week.

There is less interest in contract coal as buyers and sellers have found it quite impossible to reach common ground, and the great bulk of the business is being done by the coal being shipped regularly and a weekly price settlement made.

We quote spot coal at not under \$4.50 for slack or mine-run, steam, and \$5 for 3/4-in. gas, per net ton at mine, Pittsburgh district.

### BUFFALO

**Bituminous prices higher and without much limit. Advance of a dollar in a week. Jobbers wishing for a government minimum. Anthracite as scarce as ever.**

**Bituminous**—Prices have advanced a dollar in a week and nothing but a limit price placed on the trade by the government will put an end of the craze that exists in Pittsburgh and other coal centers. Prices in Cleveland are even higher than in Pittsburgh. In fact, the price is just what the consumer will pay. The consumer is entirely helpless. He can get no contracts and is not sure of any coal for the future.

The advance in prices could not be made if cars were more plentiful. In fact, there is nothing in sight that looks like an adequate car supply which means that the shipper is in position to make what price he likes and there is nobody to rush in a lot of cars and break them down.

All bituminous prices are again about on a par, as they always are when the market is in a feverish state, like the present. Perhaps a small difference like the following may be made:

Youghiogheny Gas	\$6.00@6.50
Pittsburgh Steam	5.90@6.40
Ohio No. 8	5.80@6.30
Bessemer	5.70@6.20
Allegheny Valley	5.60@6.10
Cambria Co. Smithing	6.50@7.10
Pennsylvania Smokeless	6.60@7.20
All Slack	5.50@6.00

All per net ton f.o.b. Buffalo.

**Anthracite**—The situation is very puzzling. Consumers and retailers are clamoring for coal quite as much as they were last winter, but shippers are not alarmed, as they are sure that it is all on account of a scare and that nobody is really in distress. Add to this the semi-official government report that the supply is adequate and one hardly knows what to think. A local report has it that there were considerably more than 100 coal carts at a single trestle waiting at the same time last week for coal that most of them did not get. The city price has been advanced to meet the general increase made by the standard companies and that has added to the eagerness of the buyers. Independent coal sells at \$2 or more over circular.

For all this there is a good amount of coal going out by Lake, the supposition being that the upper-Lake consumers are as much in need of it as anyone. The supply was not sufficient to warrant loading cargoes till the Lake season opened and only a part of the shippers could spare it then. For April the shipment amounted to 197,775 net tons, as against 296,121 tons for the same month last season. Shipments for the week, mostly in May, were 61,200 tons, of which 20,500 tons cleared for Chicago, 14,800 tons for Milwaukee, 22,700 tons for Duluth and Superior and 3200 tons for Hancock.

Oddly enough it has so far been found impossible to establish a stable Lake coal rate. Shippers have paid 60c. to Chicago, 50c. to Milwaukee and 75c. per net ton to Sheboygan, but have failed to make a permanent rate to any port. The same is true of steamboat fuel, which is in the neighborhood of \$5.25, but not uniform, as in former seasons.

### CLEVELAND

**Poor car supply and strong demand for Lake coal forcing prices still higher. Three cent car fare doomed on account of high price of coal. No fixed price for vessel fuel.**

The local market has been very active with prices still advancing, due to the very poor car supply and strong demand for Lake coal. As an example as to how the car shortage is affecting Lake shipments, today there were less than 500 cars in local railroad yards for Lake shipment, while a year ago more than 3000 cars were here for the boats.

City Lighting Commissioner Davis announced recently that he would ask the council to authorize the immediate purchase of 25 coal cars for use in hauling coal direct from the mines, as he has been unable to get enough coal to take care of their requirements.

President J. J. Stanley, of the Cleveland Railway Co. has stated that their coal bill has been increased \$50,000 per month and that inside of three months the car fare will have to be raised from three to four cents.

The New York Central R.R. has closed a contract for 300,000 tons Pittsburgh No. 8 mine-run per year for three years at \$1.65 net ton, f.o.b. mine subject to new mining scale, effective Apr. 16.

To date there has been no attempt to settle the price of fuel for boats for the season. The temporary price of \$5 at the docks and \$5.25 from lighters, set about a month ago, still stands and is likely to continue until the coal men reach some basis of production and transportation upon which they can rely.

Following are the market prices per short ton, f.o.b. Cleveland:

	Three-quarter	Mine-run	Slack
No. 8	\$5.75	\$5.75	\$5.75
Cambridge	5.75	5.75	5.75
Middle Dist.	5.75	5.75	5.75
Hocking	5.50	5.50	5.50
Pocahontas	6.50		

### TOLEDO

**Heavy consumption and light production. Very little spot coal available. Acute car shortage.**

The coal weather of the past week has given new impetus to the coal market here. Industrial and manufacturing plants are all after coal, and with the mines averaging but two or three work days a week, dealers are hard put to supply the demand. There is practically no Pocahontas being offered, the little supply there is, selling at \$5. for mine-run, and \$5.50, for lump and egg at the mines. The recent heavy buying by the Government has frightened many of the small dealers and they are offering almost any price to get coal.

Lake coal is a little slow, but the demand continues brisk. The car shortage is seriously hampering shipments. Nearly twice as much coal will be shipped to Canada this summer as last. Almost every Lake freighter which has been registered at the United States customs office here, will be in the Canada coal trade. Lake men report that ice at Whitefish Point, Lake Superior, continues to hold the freighters in the lower Lakes.

### DETROIT

**Increasing scarcity of steam coal causes greater firmness in prices. Anthracite deliveries backward. Ice blockade delays Lake shipments.**

**Bituminous**—With the demand from steam plants showing no noticeable increase in volume the supply of coal appears to have been curtailed to some extent. Incoming shipments are scarcely sufficient to meet requirements and in consequence the market has developed much firmness with a tendency toward advancing prices. Jobbers say there is no free coal on track in the city and they are experiencing much difficulty in obtaining sufficient to fill their orders. Quotations are holding around \$4.50 to \$4.75 at the mines on steam, lump and egg, while slack, which is even more scarce, is held at about the same price. Though mine-run does not find a broad market in Detroit, it is quoted at \$4.25 to \$4.50, with freight from the mines to be added.

Steam-coal users do not appear to be collecting any reserves in excess of a few days' requirements. Temperature conditions have been unseasonably cold and rainy weather is frequent, the combination serving to maintain a certain amount of interest in coal for household heating. Smokeless lump or egg is virtually unobtainable.

**Anthracite**—Vexatious delays are being experienced by retail dealers in getting supplies of anthracite. Some firms that placed large orders for delivery in April have had no receipts, while only small amounts have come to others. As many of the domestic users are clamoring to have their winter coal put in now, the situation is rather tense for the dealers. The retail price is about \$9.25 on stove or egg sizes and \$9.75 on chestnut, comparing with \$8 and \$8.50 in the early part of last season.

**Lake Trade**—Coal is slow in getting to loading docks due to inadequate car supply and shipments over the Lake routes have further been impeded by ice conditions. Though the first up-bound steamer passed through the Sault Ste. Marie locks, Apr. 24, ice has crowded into Whitefish bay and for more than a week 100 or more vessels have been imprisoned in it.

### COLUMBUS

**Prices unsettled and higher. Buyers bidding against each other for tonnage.**

The coal trade has made a strong advance during the past week, due to increased demand for both steam and domestic tonnage with a reduction in supplies. Prices have advanced rapidly and there is a wide range in quotations. The market has again approached the "runaway" stage and coal men look for strenuous conditions in the coming few weeks. Unless the Federal government steps in with price and distribution regulations, quotations will likely be higher yet.

Steam business is one of the strongest points in the market. Large consumers have been bidding aggressively for tonnage and prices have been stronger. Railroads are also in the market and some contracts have been closed. Producers have been keeping away from contracts for large steam tonnage, preferring to sell on the open market. It is generally believed that the government will take a hand by fixing maximum and minimum coal prices and also by regulating distribution.

Domestic trade has also been active. Householders, who have been holding off, are asking their dealers to deliver their winter's supply of fuel and that has made a good market. Retail prices are available, having a range of about \$1 per ton. Pocahontas is strong and the same is true of West Virginia splits and smokeless. Anthracite is scarce and high. Coke is firm.

Car shortage, which has been the worst for several months, has still further curtailed production in all Ohio fields. Despite efforts of railroad officials to get the return of coal cars, there is a marked scarcity. The Hocking Valley reports about 50 per cent. car supply and the same figures are reported from Cambridge, Crooksville and Massillon. Eastern Ohio has a still smaller car supply.

Prices on short tons, f.o.b. mines, are as follows:

	Hocking	Pomerooy	Eastern Ohio
Rescreened lump	\$4.50	\$4.50	
Inch and a quarter	4.50	4.50	\$4.50
Three-quarter inch	4.25	4.50	4.25
Nut	4.25	4.25	4.25
Egg	4.25	4.25	
Mine run	4.25	4.25	4.25
Nut, pea and slack	4.25	4.25	4.25
Coarse slack	4.25	4.25	4.25

### CINCINNATI

**Continued car shortage and strong demand keep the market high, with no indications of a let-up. Unseasonably cold weather a big factor.**

The continuance of all of the factors which have contributed to the support of the coal market for months past is noted with no indication of any change in the near future. With no improvement of note in the car supply, and with the demand exceeding the available supply in all departments, the situation is as strong as it could possibly be. Industrial consumers will require the maximum amount of fuel during the summer months, apparently, as speeding up to meet war requirements is in prospect, while retail dealers continue to report heavy demand from their customers for storage purposes. During the past week cold weather contributed somewhat to the strength of the domestic market, as fuel for immediate use is still required by small consumers; but this factor was hardly required to hold up the market, in view of the conditions noted.

### LOUISVILLE

**Further price increases due in large part to more aggravated shortage of cars and labor, together with large demand.**

An advance in prices of about half a dollar a ton has occurred, with the operators accepting offers only on a day-to-day basis and contracts of almost every kind declined. Eastern Kentucky operators reported a car supply of not better than 40 per cent., while western Kentucky operators complained of an even worse provision than this. Irregular work is causing labor to seek employment elsewhere, while some operators state that enlistments are further reducing their forces. Some of the large operators who maintain retail yards are attempting to stock them for the winter trade, but have been finding it almost impossible to do so.

Eastern Kentucky quotes block at \$4.50@5; egg, \$4@4.75; mine-run, \$4@4.50; nut and slack, \$4@4.25. Western Kentucky prices range: Lump, \$2.75@3; mine-run, \$2.25@2.50; nut and slack, \$2.25. All prices are f.o.b. the mines in car lots.

### BIRMINGHAM

**Heavy spot demand and increasing shortage in supply of free coal causes prices to stiffen 25c. to 50c. per ton. Car supply at mines not furnishing railroad fuel half requirements.**

Coal has been in greater demand during the past week than for some time past, and on account of the poor car service afforded the mines the supply of free coal has been further restricted and prices have shown an increase from 25c. to 50c. per ton. Not much attention has been paid to schedules and the available coal has gone to the spot buyer who offered the most attractive price. Prices have ranged about as fol-



lows per net ton mines: Big Seam mine-run, \$2.75@3; Carbon Hill, \$3@3.25; Black Creek, Pratt and Cahaba, \$3.50@4. A good tonnage sold at the maximum prices quoted for the lower and higher grades of steam coal. Inquiries were received from the federal government for 4000 tons for the Atlanta penitentiary and 8200 tons for use at Montgomery.

Domestic demand continues good and one dealer paid \$3.75 per net ton mines for 15 cars of low-grade lump coal. The May schedules on domestic grades was increased 10c. per ton on account of the wage increase effective May 1. However, as in the steam trade, schedules are not being adhered to on account of the short supply and the brisk bidding for what is available.

Despite the fact that many new openings have been made to augment the production, nothing can be accomplished along this line until car supply and labor conditions have been bettered.

## Coke

### CONNELLSVILLE

Spot market higher. Effect of byproduct production. Indisposition to quote on contract.

The new wage scale posted at the end of April by the H. C. Frick Coke Co. has now been adopted throughout the region. The average advance is a shade over 10 per cent. While a number of jobs were advanced considerably more they do not figure heavily in the cost per ton.

The spot market has undergone a stiffening, last week's car supplies not being as good as supplies of the previous week, while this week is bringing little if any improvement. Offerings by the byproduct producers seem to be reduced. Occasionally of late some of the byproduct plants attached to furnaces have had surplus coke which they sold on the Conneltsville basis. The offerings are irregular as supplies of coal at the ovens vary. It is now difficult to pick up any spot coke at \$7.50 and \$8 is likely to have to be paid to get any considerable tonnage.

It would appear that to prevent shortage the Conneltsville region must ship 400,000 tons of coke a week, or very nearly that amount. The heaviest shipments in the history of the Conneltsville region were in the spring of 1910, when for some time they averaged 450,000 tons a week. At that time the United States was producing pig iron at the rate of 31,000,000 tons a year, while now it is producing at the rate of 41,000,000 tons. The new byproduct ovens have taken care of more consumption than is represented by new furnaces.

Inquiries have appeared for 15,000 or 20,000 tons of coke a month over the second half of the year but operators are showing an indisposition to quote, on account of the uncertainties.

The "Courier" reports production in the Conneltsville and lower Conneltsville region in the week ended Apr. 28 at 379,778 tons, a decrease of 20,245 tons, and shipments at 424,414 tons, an increase of 59,676 tons. Much coke shipped the preceding week had been delayed at scales.

The market is now quotable as follows: Spot furnace, \$7.50@8; contract, \$8; spot foundry, \$9.50@10.50; contract, \$8.50@9.25, per net ton at ovens.

**Buffalo**—In spite of the sharp advance in bituminous coal, the coke market has not been seriously affected, though no reason is assigned for it. The consumption is good and there is no prospect of a falling off in orders. Conneltsville agents quote best 72-hr. foundry at \$11.35@11.85, 48-hr. furnace at \$9.85, off grades at \$8.85 and stock at \$8.60, per net ton, f.o.b. Buffalo.

**Baltimore**—The market for coke is feverish. Little is coming through and deliveries are below even immediate needs. The furnace basis is around \$8 to \$8.50 and the foundry about \$10.

**Chicago**—The coke market is about the same as it has been for some time. Circular price is \$6.60 for May, but inasmuch as the output is sold up, mostly on contract, prices are purely nominal whether the spot market be quoted or circular price be named. Any free coke can easily bring a premium of \$1 above the circular price. Furnace and foundry coke prices range from \$8 to \$10 at the ovens.

**Birmingham**—The spot coke market continues strong with foundry quotations \$12.50 to \$15 per net ton ovens. It is understood that Virginia coke interests were offering a limited tonnage of foundry coke in this district the past week at \$11.75 per net ton ovens. The furnace product is scarce and no quotations are available.

## Middle Western

### GENERAL REVIEW

Market showing rising prices, especially on Eastern coal. Scarcity of railway equipment, both cars and engines, causing alarm in all quarters.

During the past week the increase of prices has been very noticeable, especially on West Virginia, Pennsylvania and Ohio bituminous, the

increase showing as much as \$1.50 on some of the higher grades. Anthracite for shipment during this month is quoted at various prices, the independent companies naming figures ranging from \$1 to \$1.50 higher than the previous month, and the other companies maintaining a price of only 35c. above April.

The shortage of coal cars and engines is steadily growing worse, especially in the Indiana-Illinois field where the working schedules have been less than half time on this account. In the Eastern field the supply of cars has been somewhat better the past ten days than during the earlier spring months, ranging from 65 per cent. down to 45.

The dock companies report shipments en route to the head of the Lakes, and expected by the middle of the month at the docks. The Northwest is practically depleted of hard coal, the Twin Cities reporting prices ranging from \$10.25 to \$10.50 per ton on the little amount held in storage there. One company has 50,000 tons of anthracite loaded on boats, which will arrive within the next three weeks at Duluth and Fort William. This will materially help the situation. The upper Lakes country has been a heavy buyer of southern Illinois coal the past three months, and it will be some relief to the shippers of that district to be in position to place their coal through the regular channels.

### CHICAGO

Eastern prices materially increased. Slight raise on all grades of Indiana and Illinois.

The increase in prices on Eastern bituminous to this market varied from \$1 to \$1.50 per ton, and it is very scarce at these higher levels. Illinois and Indiana coals are up 25c. per ton over April, and a few orders have been received offering premium prices of 50c. above the circular for May.

Chicago retailers are unable to secure anthracite or smokeless coals in any quantity, and as a result of the insufficient supply are allowing but one ton to be delivered to each customer, at the following prices: Anthracite, \$9.50; Pocahontas lump and egg, \$10; Pocahontas mine-run, \$9.

Eastern Kentucky coals are practically out of the market, the largest dealer in the city reporting this coal on hand at only one yard and quoting \$10 for sidewalk delivery. Indiana and Illinois retail prices range from \$6.25 to \$7, depending on quality and size.

Franklin County bookings for the coming week are more than double the rated capacity of the nineteen mines in that field. These orders are from a widely scattered territory, New Orleans, the copper and iron ore range of Minnesota and Michigan, the extreme western part of Nebraska and Kansas, and as far as Detroit to the east. The poor car supply the past week has greatly handicapped these mines and the running time has been the lowest in the history of the county. During April these mines produced about 910,000 tons, an increase over last year of more than 500,000 tons, but the May tonnage will prove much lighter if the supply of cars is not increased.

Williamson County being adjacent to Franklin, conditions there are about the same, prices being up 25c. on May shipments, and more business coming in than can be taken care of within the next three weeks. Screenings are very firm and the price on spot coal is 25 to 50c. above last week. One operator in this field closed two contracts in Milwaukee the past week at price of \$3 per ton, at mines, on 40,000 tons for shipment between now and Mar. 31, 1918.

In Saline County the mines are practically sold up for May, and domestic prices are reported to be as high as \$4 at the mines, while there is a very poor car supply, not better than forty per cent., to take care of more business than was on hand at any one time during the past winter.

The Central Illinois field reports the same conditions as existing in the southern part of the state. There has been a general advance on all grades, and most of the companies are sold up for the balance of the month. Another increase of 25c. will probably be made in order to stop the rush of buying.

Quotations in the Chicago market are as follows, per net ton f.o.b. cars at mines:

	Springfield	Fulton & Peoria Cos.	Clinton & Sullivan Cos.	Green & Knox Cos.	Cartersville
Domestic lump.....	\$2.75@3.00	\$2.75@3.00	\$2.75@3.25	\$2.75@3.00	\$3.25@3.50
Steam lump.....	2.25@2.75	2.25@2.75	2.50@3.00	2.25@2.75	3.00@3.50
Egg.....	2.75@3.00	2.75@3.00	2.75@3.25	2.75@3.00	3.25@3.50
Nut.....	2.75@3.00	2.75@3.00	2.75@3.25	2.75@3.00	3.25@3.50
Mine-run.....	2.25@2.50	2.00@2.50	2.00@2.50	2.00@2.50	2.50@3.00
Screenings.....	2.25@2.50	2.00@2.50	2.00@2.50	2.00@2.50	2.50@3.00
	Williamson & Franklin Cos.	Saline & Harrisburg	Poca. & W. Va. Smokeless	Penna. Smokeless	Eastern Kentucky
Lump.....	\$3.25@3.50	\$3.25@3.50	\$5.00@5.50	5.00@5.75	\$4.50@5.50
Egg.....	3.25@3.50	3.25@3.50	5.00@5.50		4.50@5.50
Nut.....	3.25@3.50	3.25@3.50			4.50@5.50
No. 1 nut.....	3.25@3.50	3.25@3.50			
No. 2 nut.....	3.25@3.50	3.25@3.50			
No. 3 nut.....	2.75@3.00				
No. 1 washed.....	3.25@3.50				
No. 2 washed.....	3.00@3.50				
Mine-run.....	2.75@3.00	2.50@2.75	5.00@5.25	5.00@5.75	4.50@5.25
Screenings.....	2.75@3.00	2.50@2.75			

Hocking Lump \$3.75@4.00. Splint Lump \$3.75@4.00.

Fulton and Peoria Counties, also the northern field comprising La Salle, Grundy and Bureau Counties, are unable to take care of the business offered. Prices have been advanced, and shipments are light on account of poor car supply.

Clinton and Sullivan Counties in Indiana report prices higher by 25 to 50c. per ton, an overabundance of orders, and a car supply that has hindered operations at least 50 per cent. The prices on sized coal in this field have reached \$3.50 and Knox County reports their prices 50c. below those in Sullivan and Clinton.

### MILWAUKEE

Regular schedules are abandoned and prices very irregular. Very little contracting. Lake coal arriving but not in sufficient supply to meet the demand.

Milwaukee is practically a spot market for coal. Furthermore, there is to be no regular scale of prices. This condition was established at a meeting of representatives of the dock companies following which all large consumers, jobbers and small dealers were notified by circular of the new dispensation. In future orders will be received subject to prices in effect at time of delivery, and for cash in 30 days. There are no exemptions, the street railway and lighting corporation, which consumes over a quarter of a million tons of coal annually, being held to the same rule. To protect itself, this corporation is establishing a dock yard at which Illinois coal will be received by rail and delivered to its several power houses by means of river barges. It is evident that the dockmen intend to keep an anchor to windward this season. Last year found them loaded with contracts at moderate figures, which they were unable to fill in many cases.

Hard coal is being held at a dollar a ton above the ruling figures of a year ago, while soft coal has been advanced fully 100 per cent. Steam, or bunker coal, is held at \$6 and Pocahontas mine-run, which was retailed at \$7.85, in bins, last week, is now \$8. The retail schedule on anthracite calls for \$9.45 for egg and stove sizes, \$9.70 for nut, \$8.10 for pea and \$7.50 for buckwheat. Pocahontas lump calls for \$9.35 and Hocking \$8.35. Coke sells for \$9.25 and pea coke for \$7. About \$1.50 per ton off from these figures will give the prices at the yards in cars or wagons.

Nearly 150,000 tons of coal have reached port since the opening of navigation, of which about 30,000 tons were anthracite. The hard coal is being doled out in small quantities in order to meet the greatest spring demand that has been known in years. Consumers are panicky, because of a feeling that record prices for coal are inevitable next winter.

Railroads in the Northwest will hereafter use their gondola and hopper cars mainly for the transportation of coal and iron, in accordance with an emergency rule promulgated by the American Railway Association, and every movement of cars when empty must be in the interest of prompt return to the home road. It is even demanded that cars be sent back to the mines empty if necessary.

### ST. LOUIS

Unprecedented conditions in the St. Louis market. Retail coal higher than any time last season. Demand far exceeds supply of everything, and conditions are bordering on a panic, with no relief in sight.

The coal market is almost panic-stricken; the public is awakening to the fact that they may not get coal next winter and have deluged the retailers with storage orders this week.

On account of the scarcity of coal, the retailers put their circular on Williamson and Franklin County to \$6 delivered. Mt. Olive to \$4.25, and Standard to \$3.75, and they give no indications that this price is protected, other than from day to day. Owing to this sudden jump of \$1 a ton, retail, a panic started among the consumers that swamped the retailers with orders, and it will take some of them several weeks to catch up. Even then, it is understood that the price at time of delivery must govern settlements.

In the Williamson and Franklin County field prices advanced from \$3 and \$3.25 last week

to \$3.75 and \$4 at the present time. Screenings are not as strong as the domestic sizes. They are worth from \$2.75 to \$3 and as high as \$3.25. It is largely a case of being able to get the coal. Indications are that the domestic sizes will continue to soar and \$5 may be reached before the end of the month.

In the Mt. Olive district the operators are calm and are holding their trade in check. They are taking care of the regular business and refusing anything additional. This coal has not advanced in price in a wholesale way as coal from the other fields, which is much to the credit of the operators in this district.

In the Standard field the same conditions exist as in the high grade. The domestic demand has sent this coal out of sight, and as the railroads are drawing heavily on this field there is very little free tonnage available. An unusual demand from the Northwest and Chicago depleted the local market of any available tonnage that might have been offered. Conditions in this field will become more serious from now on unless the local roads put restrictions on their equipment. At the present time there are no restrictions.

No new contracts have been entered into in the Standard field, nor in the high grade field, but the railroad tonnage is still heavy from all sections, which demonstrates that the railroad companies had a good line on the conditions that have come about.

There is no anthracite moving in, with the exceptions of about 10 cars last week and 6 or 7 cars of smokeless. There is no outside coke available at any price to relieve the anthracite situation, and local coke is not obtainable.

Arkansas coal continues to arrive in a fairly good volume, but not sufficient to keep up with the demand. It is impossible to make any forecast as to the conditions in the future.

Prevailing market is per net ton f.o.b. mines:

	Williamson and Franklin Co.	Mt. Olive and Staunton	Standard
6-in. lump...	\$3.75@4.00	\$2.50@2.75	\$2.50@2.75
3x6-in. egg...	3.75@4.00	2.50@2.75	2.50@2.75
2x3-in. nut...	3.75@4.00	2.50@2.75	2.50@2.75
No. 2 nut...	3.75@4.00		
No. 3 nut...	3.50		
No. 4 nut...	3.00		
No. 5 nut...	2.75		
2-in. screen...	2.75	2.25	2.00@2.25
2-in. lump...			2.35@2.50
3-in. lump...		2.50	
Steam egg...	3.75	2.25	2.35@2.50
Mine run...	3.25@3.50	2.25	2.25@2.35
Washed			
No. 1...	4.00		
No. 2...	4.00		
No. 3...	3.75@4.00		
No. 4...	3.50		
No. 5...	2.75		

Rate on Williamson and Franklin County is 72½¢. Rate on other fields is 57½¢.

#### KANSAS CITY

Little coal is on hand, the supply being depleted as fast as it comes by orders for immediate delivery. It is not believed that Arkansas anthracite will be higher than \$9.25 this month, semi-anthracite \$8, Kansas coal \$6.50, which are the present prices; however, these will be advanced 25¢ a month in June, July, August and September. There is a tendency on the part of dealers to store anthracite and semi-anthracite. There is little anxiety among dealers, however, as to the supplies this fall, their chief concern being to have coal on hand to supply orders for immediate delivery, the public still being worried over the available stocks.

### General Statistics

#### BALTIMORE & OHIO R.R.

The following coal and coke tonnage was moved over the Baltimore & Ohio R.R. and affiliated lines during the months of February and March, 1916-17:

	February 1917	February 1916	March 1917	March 1916
Coal.....	2,361,350	2,666,007	2,851,721	2,763,165
Coke.....	203,766	378,461	318,194	400,518
Total....	2,565,116	3,044,468	3,169,915	3,163,693

#### PENNSYLVANIA RAILROAD

The following is a statement of the coal and coke moved over this company's lines east of Pittsburgh and Erie during March and the first three months of the year, together with the increase or decrease over the same period in 1916, in short tons:

	March, 1917	March, 1916
Anthracite.....	1,121,117	4,644,949
Bituminous.....	4,644,949	1,082,495
Coke.....	1,082,495	
Total.....	6,848,561	

+ indicates an increase, and — denotes a decrease.

#### THE CHESAPEAKE & OHIO

Comparative statement of coal and coke traffic from New River, Kanawha and Kentucky districts for the month of March, 1917-16 and the first three months in short tons:

To	March 1917	March 1916	Three Months 1917	Three Months 1916
Tidewater...	599,147	430,733	1,625,050	1,376,107
East.....	248,930	302,110	713,325	782,552
West.....	1,079,451	1,315,163	3,121,346	3,790,089
Company's Fuel.....	260,701	282,343	654,869	661,560
From Connections...	171,150	250,210	454,975	599,749
Total.....	2,359,379	2,580,559	6,629,565	7,210,057
Anthracite.....	1,590	779	2,934	3,138
Total.....	2,360,969	2,581,338	6,632,499	7,213,195
Coke.....	43,457	48,178	131,141	136,051

#### NORFOLK AND WESTERN

Destination of shipments over this road for February and the first three months of last year and this year were as follows, in short tons:

Coal	March 1917	March 1916	Three Months 1917	Three Months 1916
Tidewater Foreign...	247,353	242,428	673,168	600,924
Coastwise...	320,028	278,174	971,496	767,603
Domestic...	2,191,146	2,110,445	6,391,985	6,342,377
Coke Foreign.....	5,400	4,851	15,226	13,387
Domestic.....	188,352	220,948	508,929	600,081
Total....	2,952,279	2,856,846	8,560,804	8,324,372

### I. C. C. Decisions

No. 8642. La Crosse Shippers' Association et al. vs. Chicago, Indianapolis & Louisville Ry. Submitted Sept. 25, 1916. Decided Apr. 2, 1917.

1. Rates on coke in carloads from Indianapolis, Ind., and from Chicago, Joliet, and Peoria, Ill., to La Crosse, Wis., found to have been justified. Complaint dismissed.

2. In the absence of proof of damage to the shipper, an incidental contravention of the long-and-short-haul rule of the fourth section over an alternative route does not of itself afford a sufficient basis for an award of reparation.

3. Where the record fails to indicate clearly the character of the shipping instructions given the initial carrier, the Commission is left with no adequate grounds for a finding of misrouting.

No. 6955. G. I. Moore vs. St. Louis & San Francisco Railroad. Portion of Fourth Section Application No. 3241. Submitted June 8, 1916. Decided Apr. 10, 1917.

1. Former finding that the rate on coal from southern Illinois mines to Hazel Spur, Mo., was not shown to be unreasonable or otherwise in violation of the act, and denial of the application of the Chicago & Eastern Illinois Railroad Co. to continue rates on coal from these mines to Chaffee and Cape Girardeau, Mo., lower than the rates contemporaneously applicable on like traffic to Illmo, Mo., and other intermediate points, affirmed on rehearing.

2. Rates from the same mines to Illmo, Rockview, Mo., Chaffee, and Cape Girardeau not shown to be unreasonable, unjustly discriminatory, or unduly prejudicial.

Investigation and Suspension Docket No. 892. Coal and Coke from New Mexico Points. Submitted Feb. 26, 1917. Decided Apr. 9, 1917.

Proposed increased rates on coal and coke in carloads to points in Texas, Oklahoma and Louisiana from producing points in Colorado and New Mexico found not to have been justified, except as to certain specified points named or designated in the report.

No. 8509. S. Obermayer Co. vs. Pennsylvania Co. Submitted May 8, 1916. Decided Apr. 10, 1917.

Rate charged on ground bituminous coal in carloads from Rillton, Penn., to Chicago, Ill., not shown to have been or to be unreasonable or otherwise illegal. Complaint dismissed.

No. 8599. Hocking Domestic Coal Co. vs. Kanawha & Michigan Ry. Submitted Mar. 20, 1917. Decided Apr. 9, 1917.

The defendant, in order to connect two separate parts of its line, uses a portion of the rails of another carrier, subject to a condition in the trackage agreement that excludes the de-

Increase or Decrease	January 1 to March 31, 1917	Increase or Decrease
+ 1,057	2,982,236	— 246,282
+441,778	12,610,951	— 108,219
—274,509	2,968,884	— 709,455
+168,326	18,562,071	—1,063,956

fendant from serving industries on private sidetracks connected with the leased line. Upon complaint of the operator of a coal mine on such a sidetrack, demanding service at its mine; Held, That the defendant, under the restraint of the contract, may lawfully decline to serve it. Complaint dismissed.

Investigation and Suspension Docket No. 938. Cincinnati Switching Absorption. Submitted Mar. 1, 1917. Decided Apr. 19, 1917.

Proposed cancellation of absorptions of switching charges which would result in increased rates on grain in carloads originating at, and on coal in carloads destined to local stations on the Cincinnati, Indianapolis & Western Railway found not justified. Suspended schedules ordered to be canceled.

No. 8569. Akron, Canton & Youngstown Railway Company vs. Baltimore & Ohio R.R. Submitted May 29, 1916. Decided Apr. 17, 1917.

Charge of 10¢ per 2,000 lb., minimum \$3 per car, imposed by defendant for switching cars loaded with coal from complainant's point of connection with the Cleveland division of defendant at Akron, Ohio, to private sidings and industries located on that division of defendant within the switching limits of Akron, while contemporaneously maintaining a charge of \$2.50 per car for switching cars loaded with coal from points of connection with the Erie Railroad Company and the Pennsylvania Company to said private sidings and industries, found to be unduly prejudicial. Similar allegation in respect of shipments to points on defendant's New Castle division, not sustained.

### Foreign Markets

#### GREAT BRITAIN

Apr. 19—The tone of the market shows a distinct improvement since last week's report. Tonnage is better and prices well maintained:

Best Welsh steam.....	Nominal
Best seconds.....	Nominal
Seconds.....	\$6.00@6.24
Best dry coals.....	5.76@6.00
Best Monmouthshires.....	6.00@6.24
Seconds.....	5.52@5.76
Best Cardiff smalls.....	4.08@4.32
Cargo smalls.....	3.60@3.84

The prices for Cardiff Coals are f.o.b. Cardiff, Penarth or Barry, while those for Monmouthshire descriptions are f.o.b. Newport, both net, exclusive of wharfage.

Freights—Although the supply of tonnage for the shipping of coal has improved, there is not very much improvement in the supply of tonnage free for charter. Rates are still very firm, and in some cases quite disproportionate, for instance, Barcelona has paid \$38.88 as against \$20 for Gibraltar.

Gibraltar.....	\$20.00	Port Said.....	\$28.80
Marseilles.....	21.00	Las Palmas.....	18.00
Genoa.....	24.30	St. Vincent.....	19.20
Naples.....	23.58	River Plate.....	25.20
Alexandria.....	28.80		

### Financial Notes

#### SLOSS-SHEFFIELD STEEL AND IRON COMPANY

The annual report of this company for the year ended Nov. 30, 1916, contains the following comments on its coal properties:

During the fiscal year the company produced 300,000 tons more coal than it ever produced since its organization, and over 400,000 tons more than the output of the previous year.

Unfortunately an explosion took place at Bessie mine during the year, which resulted in the death of a number of miners, and delayed the operation of the company considerably. After thorough investigation, not only by our company officials, but by the State Mining Inspectors, no cause could be found for this explosion. The injury to the mine has now all been remedied.

A large filter plant was built at the Bessie mine, as well as at Flat Top, an improvement that is of much benefit to the company.

An additional compressor with a capacity of 1200 cu. ft. of air per minute was installed at the Bessie mine, and an electric light plant was also installed there.

The company produced over 510,000 tons of coke during the year.

A number of beehive coke ovens, which had been abandoned in previous years, were rehabilitated during the last year, and produced satisfactory results.

During the year a new boiler plant, of 1500 hp. Stirling boilers, was completed at Flat Top. This plant is modern in every particular. As at the furnaces, a number of minor improvements and expenditures were made at the coal mines.